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TEACHER EDUCATION

A False Introduction: Becoming a HPE Teacher During a Pandemic

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Abstract

The COVID-19 pandemic disrupted health and physical education (HPE) teaching, particularly for preservice and first-year teachers. This study explored how six HPE teachers in the Eastern U.S. adapted to these challenges during the pandemic. Data were collected through semi-structured interviews, and thematic analysis revealed five major themes: (a) "You want me to teach HOW?"—navigating new instructional methods, (b) "PE without equipment and six feet apart"—adjusting to safety protocols, (c) "Behind the Scenes"—the hidden challenges of remote and hybrid models, (d) "I became a behavior management guru"—addressing increased behavior issues, and (e) "The Pandemic Crater"—the academic and developmental impacts. These findings highlight the profound challenges these teachers face and underscore the need for continued support and resources to help educators adapt to evolving circumstances during crises like the pandemic.

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School Lockdown Protocols

COVID-19 arrived in the spring of 2020 in the US and forced schools around the world to adapt to new ways to deliver instruction to students (Meinck et al., 2022; UNESCO, 2020). In the geographic area of this study, "the pandemic resulted in divisions converting to remote learning for the second half of the 2019-20 school year and much of the 2020-21 school year" (LARC, 2022, p.1). At the start of the 2020-2021 school year, school divisions had the authority to decide whether to deliver in-person instruction (LARC, 2022). At the beginning of 2020-2021, the majority of school divisions provided remote or hybrid instruction—51% used a remote model, 42% used a hybrid model, and 8% used a face-to-face model. By the end of the 2020-2021 school year, only one division remained remote, 55% were using a hybrid model, and 44% were fully in-person (LARC, 2022). Senate Bill 1303 (2021) mandated school divisions "to offer in-person instruction to students for the 2021-22 school year" School divisions were permitted exceptions that allowed for hybrid or remote instruction to be used by (a) schools during periods of high COVID-19 transmission, (b) staff who had been exposed to COVID-19, or (c) students with health and safety concerns related to in-person instruction upon request of their parent or guardian (SB 1303, 2021). This created a variety of experiences for pre-service and first-year teachers in the state.

Loss of Student-Teaching Experience

Student teaching is a form of field experience that is an essential part of teacher education (Anderson & Stillman, 2013). Studies show that teacher preparation programs that offer a school-based student-teaching experience have a significant impact on teacher preparation. (Ingersoll et al., 2014; Knight et al., 2015; Leeferink et al., 2015; Sadler & Klosterman, 2009). Studies have also linked field experience placements with increased teacher efficacy (Gurvitch & Metzler, 2009; Ronfeldt, 2015) and teacher retention. (Ronfeldt et al., 2014; Whipp & Geronime, 2015). As a result, most state departments require preservice teachers to complete a designated number of hours or days of a field placement within a school division to obtain initial state licensure (Thompson et al., 2020). The state of this study requires a minimum of 320 clock hours, of which 120 clock

hours are embedded in experiential, field-based opportunities during coursework (Virginia Administrative Code, 2018).

First Year Teaching

The first year of teaching is widely recognized as one of the most challenging and formative periods in a teacher's career. Research consistently highlights that new teachers often face a steep learning curve as they transition from theory to practice, navigating classroom management, lesson planning, and developing relationships with students, colleagues, and administrators (Ingersoll, 2012; Veenman, 1984). First-year teachers frequently report feelings of isolation, stress, and overwhelm due to the complexities of the profession, especially in balancing the dual roles of educator and disciplinarian (Fantilli & McDougall, 2009). In particular, novice teachers often struggle to establish classroom routines and maintain student engagement, both critical components of effective teaching. The presence of a supportive environment, including mentorship and administrative guidance, has been shown to mitigate some of these challenges, aiding in teacher retention and professional growth (Smith & Ingersoll, 2004). However, when such support is lacking, new teachers are more likely to experience burnout, question their career choice, or leave the profession altogether. These common first-year struggles were exacerbated during the COVID-19 pandemic, as many teachers had to adjust to remote and hybrid learning formats without the usual in-person support or traditional instructional methods (Kim & Asbury, 2020).

Models of Instruction

Pre-service teachers, who had been completing field placements during the 2019-2020 year, experienced a shorter in-person internship due to COVID-19 school closures. Not only did they have a reduced field experience, but they were forced to find their first job as a licensed teacher in a less-than-ideal situation. As mentioned above, the start of the 2020-2021 school year had a variety of different teaching formats (face-to-face, hybrid, and online) across the state. Ninety-three percent of them started their first year of teaching in either a remote or a hybrid teaching model (LARC, 2022). Pressley and Croyle (2021, p.160) suggested that these teachers entered teaching "with lower teacher efficacy as they enter the class-

room compared to previous first-year teachers because of the limited preservice teaching internships."

Along with a lack of preservice internships, these teachers had to navigate teaching online in many instances. Online physical education (OLPE) classes left teachers unprepared, with little or no guidance on how to proceed, leading to a trial-and-error pedagogical approach (Jeong & So, 2020). The Society of Health and Physical Educators (SHAPE America) research suggests that OLPE is not the same as in-person PE; they often have different focuses or goals (Goad & Jones, 2017). Seventy percent of OLPE for secondary schools did not meet national guidelines of 225 minutes of PE per week (Daum & Buschner, 2012). Daum & Woods (2015) examined K-12 Physical Education Teacher Education faculty perceptions of OLPE and were unanimous in their belief that OLPE should not be designed for elementary-aged children. Which, of course, creates a huge problem for schools forced to administer physical education remotely or in hybrid models.

Purpose of the Study

Research has examined pre-service teachers' and teachers' perceptions of the challenges of teaching in a pandemic. The current pandemic forced many schools to adopt different teaching methods or combinations of methods. This study aimed to focus on the cohorts of teachers who experienced disruption in preservice teaching experiences and then started their first year teaching during pandemic-related teaching formats. Therefore, the purpose of this study was to investigate HPE teachers' perceptions of first-year teaching following disruptions to student teaching caused by the COVID-19 pandemic.

Methods

Participants

The participants in this study were six HPE teachers (n = 6; all females) who student taught and began their first year of teaching between the spring of 2020 and the fall of 2022. All six HPE teachers attended the same PETE program at the university. The HPE teachers included elementary teachers (n = 2), middle school teachers (n = 2), and high school teachers (n = 2). The racial/ethnic makeup

of the HPE teachers was 83.3% (n = 5) White Caucasian, 16.6% (n = 1) African American, and 16.6%. Purposive sampling was used to select participants with a range of student-teaching and first-year experiences related to the pandemic. This sampling strategy aimed to provide diverse perspectives and rich insights into the research question. All six HPE teachers' identities were kept confidential, with pseudonyms used throughout all documentation to ensure their privacy.

Data Sources

Before data collection, formal approval from the Institutional Review Board (IRB) was obtained to ensure compliance with ethical research standards. The method employed for data collection was in-depth individual interviews, a well-regarded approach for delving into the nuanced dimensions of participants' lived experiences and the meanings they attribute to them (Seidman, 2013).

Individual Interviews

HPE teachers participated in individual interviews. Interviews ranged from 13 to 32 minutes (M = 23:18). The interview protocol for HPE teachers focused on their experiences with first-year teaching and student teaching during the pandemic. Specifically, questions focused on the format they used during both student teaching and their first year of teaching, the challenges and successes, and the overall impact of the pandemic on them as teachers. A semi-structured interview protocol was used for all individual interviews (Rubin & Rubin, 2011; Thomas et al., 2015). Semi-structured interviews facilitate a systematic, iterative data collection process in which questions are structured within a protocol to elicit comprehensive information while ensuring the efficiency of subsequent data analysis (Galletta, 2013).

Data Analysis

All interviews were audio- and video-recorded via the platform Zoom and transcribed verbatim for analysis. Data analysis was guided by constant comparison methods (Dey, 1993; Goetz & LeCompte, 1984) and included an iterative procedure of reducing and triangulating the data to pull out themes gathered (Patton, 2014). Data were initially coded line by line to identify patterns and categories. This is

called open coding and allows for intuitive identification of key ideas (Marshall et al., 2021). The researchers independently compiled lists of codes paired with lines of text and later met as a group to cross-check each other's work, discuss any disagreements, and reach agreement on which codes should be used, updated, or disposed of. Discrepancies were resolved through discussion and consensus. Subsequently, the researchers clustered the initial codes into conceptual categories that encapsulate shared themes among the codes, referred to as axial codes (Corbin & Strauss, 2015; Fielding & Lee, 1998). Axial codes were then grouped into themes and subthemes through an iterative process. Themes were refined through multiple rounds of coding and discussions among the research team. As a group, researchers developed themes for their corresponding code groups. Using a master spreadsheet, the researcher applied clustering to develop a diagram of relationships to identify overarching themes. The researchers, through discussion, came to a consensus to identify the overarching themes. To enhance the dependability of findings, participants were provided with summaries of the emergent themes. Participants were invited to provide feedback and clarifications, which were incorporated into the final analysis.

Trustworthiness was achieved in several ways, in line with established recommendations (Lincoln & Guba, 1985; Patton, 2014; Shenton, 2004). Trustworthiness is crucial in qualitative research to establish the credibility, transparency, dependability, and confirmability of study findings (Marshall et al., 2021). First, credibility was established through prolonged engagement with data, crystallization (gathering data from multiple sources), and participant review. Prolonged engagement allowed for a deep understanding of the data (Patton, 2015). Crystallization involved comparing data from interviews, field notes, and relevant literature (Marshall et al., 2021). This was accomplished by having multiple researchers review the findings (Patton, 2014). Participant review engages participants with the transcripts, seeking their reactions and insights (Marshall et al., 2021). This ensured that participants' voices were accurately represented and that findings resonated with their experiences (Creswell & Miller, 2000; Maxwell, 2012). Transparency is the use of conceptual and empirical literature, blended with your sense of self, abilities, and intentions, that contributes to a study's being seen as sound,

trustworthy, and good (Marshall et al., 2021, p. 48). Dependability was ensured through an audit trail that documented all stages of the research process, including data collection, coding, and decision-making. The audit trail (a transparent record of data) provided transparency and traceability of research decisions (Marshall et al., 2021). Confirmability was achieved by maintaining researcher reflexivity. In the present research project, the researchers who engaged in direct, in-person interactions with study participants had to contemplate how their professional backgrounds, personal experiences, and preconceived notions might influence their interactions with the participants. The research team regularly discussed their assumptions, biases, and potential influence on the research process.

Findings

Participant responses produced five themes: (a) You want me to teach HOW?, (b) PE without equipment and six feet apart, (c) Behind the Scenes, (d) I became a behavior management guru, and (e) The Pandemic Crater. These themes were apparent across all participant interviews. Several subthemes are discussed below using quotes from interview transcripts as evidence. Pseudonyms are used in place of participants' actual names.

You Want Me to Teach HOW?

The theme "You want me to teach HOW?" encapsulates the challenges and adaptations faced by student teachers and new teachers as they navigated the complexities of pedagogy during the pandemic. As educational institutions rapidly shifted to remote learning, educators found themselves grappling with unprecedented demands, prompting significant changes in their teaching practices. Two subthemes emerged from the data: delivery methods and virtual physical education. Together, these sub-themes illuminate the profound impact of the pandemic on teaching practices, offering insights into how educators were compelled to rethink and retool their pedagogy in response to the shifting educational landscape.

Delivery Methods

Delivery methods explore how teachers adapted traditional instructional strategies to suit an online environment, often requiring innovative approaches to engage students remotely. The pandemic

significantly impacted teachers' delivery methods, requiring them to quickly adapt to new modes of instruction. Many educators transitioned to fully online teaching, requiring them to reimagine lesson plans and instructional strategies for a digital format. This shift often involved mastering new technologies, creating engaging virtual content, and fostering student interaction and participation in an online environment. Some schools adopted a hybrid approach, blending face-to-face instruction with remote learning. In these settings, teachers faced the challenge of simultaneously engaging students in the classroom and those learning from home. This approach required flexibility and innovative strategies to ensure that both in-person and remote learners received equitable instruction. For example, Bailey said:

> I was in front of a computer and also teaching the in-person kids as well. So, I had to make sure that the students over the computer, were hopefully receiving the proper information. Um versus the students that were in person. So, I think that was kind of a challenge, because, of course, the cameras were off. You don't really know if they were really there, or just turned it on and left.

Additionally, educators had to navigate the complexities of synchronous (real-time) and asynchronous (self-paced) learning, often employing a mix of both. Synchronous sessions provided opportunities for live interaction, while asynchronous activities allowed students to learn at their own pace. Morgan said:

> So, the first semester of the year was all virtual. So, I was holding three classes a day virtually… The second semester was a little bit different. It was virtual and hybrid. So, some teachers went into the building and were completely in-person and then held like almost like a zoom with their classes with health and PE.

The variety of these approaches highlighted the necessity for teachers to be adaptable and resourceful as they sought to maintain educational continuity during the pandemic.

Virtual Physical Education

The second sub-theme, virtual physical education, delves into the unique challenges of teaching physical education in a virtual setting, highlighting creative strategies to maintain student participation and physical activity despite the constraints of remote learning. Teaching physical education virtually required educators to rethink how they delivered instruction traditionally centered around physical space and equipment. Without access to gymnasiums, fields, or shared equipment, teachers had to design lessons that students could complete at home, often with limited space and resources. Jordan stated, "We were basically just all on the computer doing online health work or just online like quizzes about sports and just learning about sports. Everything was just online. So, it really did make it hard to like, connect with the with the virtual kids because everything at that point was through Google Classroom on the computer." Tristan replied, "Well, I'm thinking what we did was we would just give them like at home challenges or posted videos and sent them like videos off YouTube, that they were supposed to do."

PE Without Equipment and Six Feet Away

The theme "PE Without Equipment and Six Feet Away" reflects the significant shifts in physical education teaching practices brought about by the pandemic, focusing on the challenges of conducting classes under stringent safety protocols. As teachers navigated the complexities of ensuring student safety, three sub-themes emerged: equipment limitations, social distancing, and wearing masks.

Equipment Limitations

Due to heightened sanitation concerns, the use of shared equipment in PE classes was largely restricted. This required teachers to design lessons that minimized or completely avoided the use of any gear. Activities that relied on bodyweight exercises, individual fitness routines, and movements that required no additional tools became central to the curriculum. Avery said:

> They couldn't do certain activities. Um, one of my schools was very relaxed about it as long as we kept everything clean. The other one was very strict about what equipment we

could use, and what equipment could be shared. You know whether it had a porous surface or not.

Social Distancing

Maintaining a safe distance between students was another critical aspect of PE during the pandemic. Traditional team sports and close-contact activities were replaced with exercises that allowed students to stay at least six feet apart. Teachers focused on individual skills, non-contact games, and personal fitness challenges that could be conducted within a confined space, ensuring that all students remained safely distanced throughout the lesson. Morgan said:

> I feel like they were constantly changing based on the levels of how many COVID cases we had. So, I think the standard was they had to stay six feet apart outside, ten feet apart inside. So, and we only have one gym space. So that was pretty tricky. We were not off. We did tag or anything of that nature. They had to use like 20-foot noodles. It felt like it was a lot of a lot of space was needed. And that was probably the biggest thing that affected us because we had very limited space.

Masks

The requirement to wear masks during PE added another layer of complexity. Teachers had to consider the impact of masks on students' breathing and comfort, particularly during physical exertion. This led to a careful selection of less-intense activities, with more frequent breaks to ensure students could participate safely while wearing masks. Teachers also had to reinforce the importance of mask-wearing and proper mask hygiene, integrating these practices into their instruction. Bailey said:

> At first it was kind of challenging, because we still have, like the mask mandate. So, being in a gym with over a hundred kids wearing a mask and having to yell. It was um very challenging, so it would kind of get annoying sometimes because I would have to pull my mouth down the yell directions, pull it back up, pull it back down, make sure somebody is doing the right thing, pull it back up.

Together, these sub-themes illustrate how PE teachers had to rethink and retool their approaches to ensure that physical education remained both safe and effective in a pandemic-affected environment. Despite the challenges, these adaptations allowed educators to continue fostering physical activity and health awareness among students while adhering to necessary safety protocols.

Behind the Scenes

The theme "Behind the Scenes" highlights the often-overlooked challenges that teachers faced outside the classroom during the pandemic. These challenges, while not directly related to classroom instruction, had a profound impact on educators' ability to teach and support their students effectively. Two sub-themes emerged under this theme: a false introduction and a lack of support.

A False Introduction

Many teachers, especially new and student teachers, began their careers or took on new roles during the pandemic, experiencing what could be described as a "false introduction" to the profession. Rather than the traditional, in-person mentoring and collaborative environments typically found in schools, these educators were introduced to a teaching landscape dominated by remote learning, virtual meetings, and limited face-to-face interaction. This unusual start often left them feeling unprepared and disconnected from the supportive networks that are crucial in the early stages of their careers. Jordan stated:

> But it was to me like the false introduction. It was because it wasn't it was nothing like what it is now. Now that we've kind of came back or found some type of normalcy and like all that good stuff. It was just that during when I first started that January 2021. Like I say, it was like ten kids in each class, and then there was like ten kids divided between four teachers or supposed to be four teachers. So, like, you didn't even have really that you had behavior issues. You didn't really have those things that you had control and learn how to deal with. And then the following year, when they came back, it was like, this is reality.

Lack of Support

The lack of adequate support from administrative structures and in professional development was another major challenge. Teachers often found themselves navigating new technologies, instructional methods, and health protocols with minimal guidance. The absence of consistent and reliable support systems, such as professional development opportunities, mental health resources, and clear communication from leadership, left many educators feeling isolated and overwhelmed. Riley said:

> I think maybe if we spent a little less time on the COVID mitigation protocols and we did more training via Squeegee and Zoom, I think, and then having an additional training for the health curriculum that they were handing us, I think we would have been much better off if everybody had received those same trainings instead of being like, hey, here's a YouTube link, see if you can figure it out from there. So, I think I think those would have probably been the best strategies in order to like, prepare everybody.

Together, these sub-themes underscore the difficulties teachers faced beyond their immediate teaching duties. The challenges of a false introduction to the profession, scheduling complexities, and a lack of support reveal the broader impacts of the pandemic on educators, highlighting the need for more robust, responsive support systems to help teachers thrive in any educational environment.

I Became a Behavior Management Guru

The theme "I Became a Behavior Management Guru" captures the heightened challenges teachers faced in managing student behavior as schools reopened after prolonged periods of isolation. With students returning to in-person learning, many exhibited increased behavioral issues, stemming from the social and emotional toll of being separated from their peers and routine school environments. Two sub-themes emerged from this challenge: socialization and participation/attendance.

Socialization

After months of isolation and limited social interaction, many students struggled to reintegrate into the school community. Teachers observed that students had difficulty adapting to group activities, respecting classroom norms, and rebuilding peer relationships. The lack of social engagement during the pandemic had disrupted students' ability to interact positively with others, leading to increased incidents of conflict, distraction, and disruptive behavior. Teachers had to become adept at fostering a supportive and structured environment that encouraged healthy social interactions while addressing the emotional needs of students who were relearning how to function in a communal setting.

Participation and Attendance

The return to in-person learning also brought challenges related to student participation and attendance. Some students, having become accustomed to the flexibility of remote learning, found it difficult to re-engage with the structured demands of the classroom. Issues such as inconsistent attendance, disengagement during lessons, and reluctance to participate in classroom activities became more prevalent. Teachers were tasked with finding innovative ways to motivate and involve students, often requiring them to develop new strategies for encouraging attendance and active participation. This included creating more engaging and interactive lessons, providing additional support to students who were struggling, and working closely with families to address underlying issues affecting student engagement.

The Pandemic Crater

The theme "Pandemic Crater" encapsulates the profound academic and developmental impacts that the pandemic left on students, creating a significant gap in both learning and personal growth. As schools shifted to remote learning and other pandemic-related disruptions occurred, students experienced setbacks that have had lasting effects on their educational trajectories. Two sub-themes emerged from this theme: academic deficits and developmental impact.

Academic Deficits

The abrupt transition to remote learning, combined with inconsistent access to resources and varying levels of support, resulted in significant academic deficits among students. Many struggled to keep pace with the curriculum, resulting in gaps in foundational knowledge and skills. Teachers observed that students returned to in-person learning with significant delays in key academic areas, such as reading, mathematics, and critical thinking. These deficits have required extensive remediation efforts and individualized support to help students catch up and regain their academic footing.

Developmental Impact

Beyond academic challenges, the pandemic disrupted students' developmental progress, particularly in social, emotional, and cognitive domains. Extended periods of isolation, limited peer interaction, and the absence of a structured school environment hindered the development of essential life skills. Teachers noted delays in students' emotional regulation, social skills, and ability to adapt to change. These developmental impacts have made it more difficult for students to fully engage in learning and interact positively with peers, further compounding the challenges of addressing the academic deficits caused by the pandemic.

Discussion

The findings of this study reveal the profound and multifaceted challenges that health and physical education teachers faced during their student teaching and first-year experiences amid the pandemic. The themes that emerged, such as "False Introduction," challenges with behavior management, lack of administrative support, difficulties with remote and hybrid models, and the impact of quarantine, underscore how COVID-19 disrupted not only the logistical aspects of education but also the pedagogical development and professional identity formation of new educators.

The theme of "False Introduction" encapsulates how many participants felt their entry into the teaching profession was inauthentic. Teaching during the pandemic did not mirror the conventional experiences they had anticipated during their preparation. Instead, it involved a makeshift, temporary model, leaving them feeling unprepared and disconnected from what "real" teaching should entail.

The absence of traditional face-to-face instruction and the reliance on remote and hybrid models significantly constrained key elements of health and physical education, such as physical engagement, movement activities, and interactive learning. Consequently, these teachers missed out on vital hands-on practice, which is crucial for developing confidence and competence in teaching physical education (Martins & Onofre, 2014).

Behavior management was another significant challenge noted by participants. With students returning from isolation, many teachers reported an uptick in behavior issues that were more complex and difficult to manage compared to pre-pandemic classroom environments. The socialization deficits among students, exacerbated by prolonged isolation and the sudden shift back to in-person learning, made it harder for teachers to maintain classroom order. Furthermore, the virtual setting of remote and hybrid learning models created its own set of management challenges, as teachers had limited ability to enforce rules or monitor engagement, particularly in subjects like physical education that depend on active participation.

The lack of administrative support was a recurring theme in the interviews, further compounding the difficulties these teachers faced. Teachers expressed frustration at the absence of clear guidance and tangible support from school leadership, leaving them to navigate novel teaching scenarios largely on their own. This lack of support was especially felt in areas such as curriculum adaptation, access to resources, and professional development, all of which were vital for helping teachers adjust to the demands of remote and hybrid learning.

Participants also spoke at length about the inherent difficulties of teaching health and physical education in remote and hybrid models. In these settings, traditional instructional methods were not feasible, and many teachers struggled to adapt their lessons to virtual platforms. Physical education, in particular, proved challenging because it typically requires space, equipment, and physical interaction, all of which were limited or absent in a remote environment. The physical and mental health implications of quarantine further exacerbated these issues, with students exhibiting decreased motivation, disengagement, and a general lack of participation in online physical activities.

Considering these findings, the experiences of these teachers reflect a broader concern about the long-term impact of the pandemic on the professional development of new educators. While many adapted and developed new skills, the conditions of their initial teaching experiences have left lasting impressions, raising important questions about the future preparation and support of teachers in times of crisis. These findings call for more robust teacher training programs that integrate crisis-management and remote teaching techniques, as well as stronger administrative frameworks to support teachers, particularly in fields like physical education that rely heavily on in-person interaction.

Overall, this study highlights the need for educational systems to anticipate and address the unique challenges of teaching in uncertain times, ensuring that teachers, particularly those in the early stages of their careers, are adequately prepared and supported.

Conclusion

Teachers were thrust into an unprecedented situation that required them to adapt rapidly and creatively to new challenges. Whether through the reimagining of teaching methods, the innovative approaches to physical education, or the increased focus on behavior management, educators demonstrated remarkable resilience and dedication. However, the discussion also highlights the need for systemic support, both in terms of professional development and resources, to better equip teachers to handle such crises in the future. As the education system moves forward, it is crucial to learn from these experiences and implement strategies that address students' ongoing academic and developmental needs while supporting educators' well-being and professional growth.

References

Anderson, L. M., & Stillman, J. A. (2013). Student teaching's contribution to preservice teacher development: A review of research focused on the preparation of teachers for urban and high-needs contexts. *Review of Educational Research, 83*(1), 3–69. https://doi.org/10.3102/0034654312468619

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Sage Publications.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory Into Practice, 39*(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2

Daum, D. N., & Buschner, C. (2012). The status of high school online physical education in the United States. *Journal of Teaching in Physical Education, 31*(1), 86–100. https://doi.org/10.1123/jtpe.31.1.86

Dey, I. (1993). Creating categories. In *Qualitative data analysis*. Routledge.

Doh, J., Stumpf, S., & Tymon, W. (2011). Responsible leadership helps retain talent in India. *Journal of Business Ethics, 98*(1), 85–100.

Fantilli, R. D., & McDougall, D. E. (2009). A study of novice teachers: Challenges and supports in the first years. *Teaching and Teacher Education, 25*(6), 814–825. https://doi.org/10.1016/j.tate.2009.02.021

Fielding, N. G., & Lee, R. M. (1998). *Computer analysis and qualitative research*. Sage.

Goetz, J. P., & LeCompte, M. D. (1984). *Ethnography and qualitative design in educational research* (Vol. 19). Academic Press.

Gurvitch, R., & Metzler, M. W. (2009). The effects of laboratory-based and field-based practicum experience on pre-service teachers' self-efficacy. *Teaching and Teacher Education, 25*(3), 437–443. https://doi.org/10.1016/j.tate.2008.08.006

Ingersoll, R. M. (2012). Beginning teacher induction: What the data tell us. *Phi Delta Kappan, 93*(8), 47–51. https://doi.org/10.1177/003172171209300811

Ingersoll, R., Merrill, L., & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition?* CPRE Research Reports. https://repository.upenn.edu/cpre_researchreports/78

Jeong, H. C., & So, W. Y. (2020). Difficulties of online physical education classes in middle and high school and an efficient operation plan to address them. *International Journal of Environmental Research and Public Health, 17*(19), 7279. https://doi.org/10.3390/ijerph17197279

Joint Legislative Audit and Review Commission. (2022). *Pandemic impact on public K–12 education*.

Kim, L. E., & Asbury, K. (2020). "Like a rug had been pulled from under you": The impact of COVID-19 on teachers in England during the first six weeks of the UK lockdown. *British Journal of Educational Psychology, 90*(4), 1062–1083. https://doi.org/10.1111/bjep.12381

Knight, S., Lloyd, G., Arbaugh, F., Gamson, D., McDonald, S., Nolan Jr., J., & Whitney, A. (2015). School-based teacher learning. *Journal of Teacher Education, 66*(4), 301–303. https://doi.org/10.1177/0022487115596828

Leeferink, H., Koopman, M., Beijaard, D., & Ketelaar, E. (2015). Unraveling the complexity of student teachers' learning in and from the workplace. *Journal of Teacher Education, 66*(4), 334–348. https://doi.org/10.1177/0022487115592163

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage Publications.

Marshall, C., Rossman, G. B., & Blanco, G. L. (2021). *Designing qualitative research* (7th ed.). Sage Publications.

Martins, M., Costa, J., & Onofre, M. (2014). Practicum experiences as sources of pre-service teachers' self-efficacy. *European Journal of Teacher Education, 38*(2), 263–279. https://doi.org/10.1080/02619768.2014.968705

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach* (3rd ed.). Sage.

Meinck, S., Fraillon, J., & Strietholt, R. (2022). *The impact of the COVID-19 pandemic on education: International evidence from the Responses to Educational Disruption Survey (REDS).* International Association for the Evaluation of Educational Achievement.

Patton, M. Q. (2014). *Qualitative research and evaluation methods* (4th ed.). Sage Publications.

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.

Pressley, T., & Croyle, H. (2021). A comparison of Virginia preservice teachers' efficacy and the effect of COVID-19. *Teacher Educators' Journal, 14*, 149–169.

Ronfeldt, M., Schwartz, N., & Jacob, B. (2014). Does pre-service preparation matter? Examining an old question in new ways. *Teachers College Record, 116*(10), 1–46.

Ronfeldt, M. (2015). Field placement schools and instructional effectiveness. *Journal of Teacher Education, 66*(4), 304–320. https://doi.org/10.1177/0022487115592463

Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data*. Sage Publications.

Sadler, T. D., & Klosterman, M. L. (2009). Transitioning from student teacher to teaching professional: Evolving perspectives of beginning science teachers [Unpublished manuscript]. School of Teaching & Learning, University of Florida. https://files.eric.ed.gov/fulltext/ED506764.pdf

SB 1303, Dunnavant, Special Sess. I. (2021). https://lis.virginia.gov/cgi-bin/legp604.exe?212+ful+CHAP0456+pdf

Seidman, I. (2013). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. Teachers College Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–75.

Smith, T., & Ingersoll, R. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal, 41*(3), 681–714. https://doi.org/10.3102/00028312041003681

Thomas, J. R., Martin, P., Etnier, J. L., & Silverman, S. J. (2022). *Research methods in physical activity* (7th ed.). Human Kinetics.

Thompson, A., Darwich, L., & Bartlett, L. (2020). Not remotely familiar: How COVID-19 is reshaping teachers' work and the implications for teacher education. *Northwest Journal of Teacher Education, 15*(2), 1–10. https://doi.org/10.15760/nwjte.2020.15.2.2

UNESCO. (2020). *COVID-19 educational disruption and response*. https://en.unesco.org/covid19/education

Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research, 54*(2), 143–178. https://doi.org/10.3102/00346543054002143

Virginia Administrative Code. (2018). VA. Stat. §§ 22.1-298.1 and 22.1-299. https://law.lis.virginia.gov/pdf/admincode/8/20/23/620/

Whipp, J., & Geronime, L. (2015). Experiences that predict early career teacher commitment to and retention in high-poverty urban schools. *Urban Education, 52*(7), 799–828. https://doi.org/10.1177/0042085915574531

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ASSESSMENT

A Qualitative Evaluation of a Sport in Schools' Program

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Abstract

This study examines data from a range of stakeholders in one Australian state involved in a year-long trial of a primary school physical education (PE) professional development program that included external sport providers. In this program, the role of the external provider was to increase the amount of time allocated to PE in the curriculum through a school's sports program, thereby providing an additional scheduled PE class each week. Semi-structured interviews were undertaken post-intervention with the primary school principals, classroom teachers, specialist PE teachers, external providers, and the professional association partner in the project. The data were analyzed using reflexive thematic analysis. Findings support existing claims regarding limited communication between external providers and teachers, ambiguity regarding the teaching qualifications of coaches providing PE curriculum experiences, and coaches working in school programs with limited knowledge of appropriate educational pedagogical practices that match student readiness for learning.

Introduction

Researchers suggest that most Australian students reach secondary school without having attained the control of movement abilities benchmarked in the curriculum by the end of Year Four

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(Pill & Harvey, 2019). Underlying reasons for students not achieving the standards indicated in PE curricula have been reported as insufficient time allocated for physical education (PE) in their primary schooling, along with substandard quality of PE programs (Hardman, 2008; Harris et al., 2012). Such concerns about the status of PE in primary schools have existed for some time, both internationally and in Australia. In addition to adequate time allocation, concerns relate to facility provision, resourcing, and primary school teachers' pedagogical content knowledge to deliver educatively purposeful PE (Dollman et al., 2006; Hardman & Marshall, 2001, 2005; Morgan & Hansen, 2008; Pill, 2007; Tinning & Fitzclarence, 2012). PE in primary school is characterised as undervalued and prone to being treated by class teachers as recreation, not education. Further, PE is often the first casualty when there are competing demands for time and resources (such as gym space) in schools, and teachers who are not confident in teaching PE have been known to omit it from their teaching schedules (Morgan & Hansen, 2008; Lynch & Soukup, 2017). Within this context, a collaborative project involving a state-based Department for Education, university researchers, and the professional association for Health and Physical Education (HPE) in one Australian state was undertaken. Through the provision of a year-long, in-school professional development program, this project sought to increase the amount of time dedicated to PE in schools and enhance PE teaching.

To enhance the quality of PE provided by teachers, professional learning opportunities were provided to teachers through a range of initiatives. These included tailored coaching by expert mentors provided by the Education Department, as well as long-term engagement with external sports providers. These providers offered sessions to supplement the weekly PE curriculum provided by a PE teacher, thereby increasing the amount of time dedicated to "PE." Key to the external providers' role within the program was their contribution to a central idea of the program approach, termed the "ideal week" (The PEPL Approach, 2021). This was understood to comprise a minimum of two "PE classes" per week, one of these classes provided by the school's PE specialist (if the school employed one) and the other by a classroom teacher working with an external provider via the Australian Government Sporting Schools Program (SSP). Within

the ideal week idea, these two lessons would be complemented by three class-based physical activity (PA) opportunities provided by the class teacher on the non-PE days. The 'ideal week' concept thus ensured daily PA opportunities for children in curriculum time during the school week.

PE in the Australian Curriculum

Schools in the jurisdiction where this project occurred follow the Australian Curriculum (AC) for Health and PE (HPE). The AC: HPE has two strands that equate to the two subjects, Health Education and PE; The Personal, Social and Community Health Strand and the Movement and Physical Activity Strand (Australian Curriculum, Assessment and Reporting Authority: [ACARA] 2021). The purpose of the AC: HPE includes students' development of movement skills that promote immediate and long-term PA participation (ACARA, 2021). Questions, however, have been raised as to whether this is being achieved (Pill & Harvey, 2019). Insufficient provision of curriculum time and teacher expertise to deliver the remit related to movement ability and efficacy represents a serious public health issue as well as a student curriculum attainment issue (Dollman et al., 2006).

PE and External Providers

In Australian primary schools, in most states, PE is the responsibility of a generalist* class teacher. In schools that employ a specialist or dedicated PE teacher, class teachers retain some responsibility for PE teaching, as typically insufficient time allocation is provided to the specialist PE teacher, and some schools have a daily PE policy (Morgan & Hansen, 2007; Spittle et al., 2022; Stylianou et al., 2022). In Australia, the generalist class teacher typically does not have specialist training in PE (Spittle et al., 2022; Whipp et al., 2011). Outsourcing PE (or at least, elements of PE) to external providers has become increasingly common, both internationally and in Australian schools, with a range of justifications offered in the literature. For example, teachers may perceive that external providers can provide superior experiences for students (Morgan & Hansen, 2007; Spittle et al., 2022; Williams et al., 2011) and/or that external providers provide students with experiences that would otherwise be absent when teachers who are not confident in teaching PE avoid

teaching it (Lynch & Soukup, 2017; Williams & Macdonald, 2015). There is also evidence to suggest that teachers perceive external provider delivery as an opportunity for informal professional development (Morgan & Hansen, 2007; Williams & Macdonald, 2015), although some suggest that this is not a major reason for outsourcing (Spittle et al., 2022).

Although there are positive opportunities associated with external providers and some external providers provide a developed curriculum that includes student assessment (Allen et al., 2024), there are tensions relating to the inclusion of external providers in Australian PE settings in schools. These include concerns that external providers lack teaching qualifications and may have limited knowledge about appropriate educative pedagogical practices required to deliver PE experiences that match student readiness for learning (Sperka et al., 2018; Spittle et al., 2022). There is also concern about the scarcity of educative or curriculum-related components in external provider programs, and the omission of student assessment (Sperka & Enright, 2018; Williams & Macdonald, 2015). These concerns may be exacerbated by the fact that there is often limited communication between external providers and teachers (Ni Chróinín & O'Brien, 2019). Concerns also exist about the Spittle et al. (2022) PE program in some schools. Collectively, the provision of external providers as a substitute for PE may mean students are receiving a "simplistic representation of physical education" (Dyson et al., 2016, p. 5) and possibly the de-professionalisation of PE and de-skilling of primary school teachers (Sperka et al., 2018; Spittle et al., 2022; Williams et al., 2011; Williams & Macdonald, 2015). Few external provider programs are evaluated, making it difficult to ascertain their value (Dyson et al., 2016).

Contextual to this study, the state professional association relevant to the jurisdiction where this project occurred asserts:

> Any activity or program delivered by an external school provider and implemented during planned curriculum time must be a part of a planned, comprehensive HPE curriculum program and linked directly to learning outcomes or learning intentions of this balanced program and that 'an external provider's program should not be used as a replacement

for the health and physical education program or teacher' (Professional Association, 2021).

Sporting Schools Program

Globally, it is recognised that sports can exert an influence on what is included in PE (Redelius & Larsson, 2010) and how it is taught (Hogan & Stylianou, 2018). A presence in primary schools is often seen by sporting organisations as a crucial aspect of their promotion and recruitment of participants (Bowles & O'Sullivan, 2020). The project investigated here incorporated the SSP, an initiative of the Australian Sports Commission. The SSP is offered to schools via four opportunities each year to apply for funds to purchase equipment or resources, pay for teachers' participation in approved PE professional learning opportunities, and/or purchase a sport program to be either teacher-delivered or provided by an approved external provider. SSP opportunities must be provided to students at no cost to families (Australian Sports Commission, n.d.-a).

Three state sporting bodies were involved in the project as external providers, to provide a sport in schools programs during class/curriculum time. The state professional association provided project guidance to the Department and mentoring to the external providers to help ensure their programs were educationally purposeful and strengths-based in line with curriculum expectations (ACARA, 2021).

There is limited research consideration of external providers' delivery of primary school PE in Australia and elsewhere, and with that, insights into the representation of external providers and their contribution to the status of PE in primary schools are understated in the literature. This study identifies important learnings pertaining to the experience of SSP as reported by principals, teachers, external providers, departmental staff, and professional association representatives.

Method

Study Context

The Education Department provided the research team with schools (n=24) that met the project eligibility criteria, namely, em-

ploying a specialist PE teacher who provided at least one lesson/week of PE and having class teachers willing to provide one lesson/week of PE. Further consideration was given to the provision of schools from diverse socioeconomic and geographic locations. Of the 24 schools identified and contacted, 14 agreed to participate, as confirmed by the school principal.

The project commenced in Term 1 of the school year with planning and school recruitment. The in-school program was delivered during Terms 2, 3, and 4. Project data collection commenced after university ethics committee approval for the project (project number 2134).

Participants

The data for this study come from end-of-project interviews with Principals (n=11), teachers (n=9) identified as classroom teachers (CT), n=6 identified as specialist PE teachers (PET), and n=2 indicated that they were employed as both a PE-specialist and classroom teacher), external providers registered as Sporting School providers (SSPr) (n=3) (who were often referred to as "coaches" by interview participants), and representatives from the professional association partner (PAP) in the project (n=2).

Data Collection

All semi-structured interviews were conducted by author 1 and occurred via Teams or Zoom meetings at a time convenient to the participant. Interviews with external providers were between 27–33 minutes in length; interviews with professional association representatives were 73–93 minutes, interviews with principals were between 22–48 minutes, and interviews with teachers lasted between 20–36 minutes (with two notable exceptions being interviews whereby two teachers wanted to interview together. These interviews lasted for 50 and 73 minutes each). For interviews with all Education Department staff, the questions related to their experiences of their involvement with the program and perceptions about the processes and outcomes. Questions for external providers related to their experiences with providing sessions in schools throughout this project, working with teachers, and the mentoring by the professional association. Interviews with the professional association focused on external providers and their role working with them, and what they

understood as important aspects pertaining to external providers in schools. All interviews were transcribed by a professional service provider approved by the university.

Analysis

The analysis of qualitative data was informed by Braun et al.'s (2019) reflexive thematic analysis. Analysis was led by authors 1 and 2, who immersed themselves in the data by engaging in ongoing "thoughtful and curious" dialogue to consider "what is interesting about the data" (Braun et al., 2019, p. 852). Author 1 developed a preliminary code list for each participant group that included both semantic codes and latent observations. Authors 1 and 2 then used the preliminary codes to identify key themes via constant comparison and reduction collaboratively, and to attain a consensus on the "story" of each transcript. Themes from transcripts within a specific dataset (i.e., principals, teachers, external providers, professional association representatives, and departmental staff) were then compared by authors 1 and 2 to develop a final set of themes relevant to the collated dataset. Authors 3 and 4 then provided a verification check on the process and themes. Analysis led to the identification of five themes, which are presented in the Results and Discussion section.

Author Subjectivity

As with all qualitative research, the findings are constructions informed by the inevitable relative subjectivities of the researchers. The authorship team comprised members with a variety of research experiences as well as teaching, coaching, and sport-playing experiences. These, along with scholarly knowledge, theoretical assumptions, and ideological commitments, cannot be divorced from the analysis process as these experiences and identities inevitably inform the interpretation of data (Braun et al. 2019). Processes undertaken to ensure the trustworthiness and integrity of the analysis, peer debriefing (for credibility), gaining deep insights to allow for thick descriptions (to support transferability), ongoing reflexivity and inclusion of participant voices (to facilitate confirmability), and provision of detail pertaining to the processes undertaken (for dependability).

Results and Discussion

Analysis of interview data provides the opportunity for key learnings in two related but distinct areas, both of which have policy and practice implications. Firstly, it provides a general understanding of teachers' perceptions and use of SSP. This initiative continues to receive a substantial investment from the Australian Government, so it is worthwhile to develop insights about its effective delivery. Secondly, this study provides insights into key interactions between external providers and schools, which identify important lessons for the ongoing relationships between schools and external providers.

Schools' Utilisation of Sporting Schools and External Providers

In the participating schools, although principals must sign off on applications, it was the PE teachers who were predominantly responsible for decisions regarding the application and expenditure of SSP funds. However, principals must sign off on the application. There was only one case where the principal assumed responsibility for the sign-off task

Principals understood that teachers used SSP grants to bring external providers in to provide PE lessons to students, to augment PE teachers' existing programs, to introduce new sport opportunities to children that are not able to be readily provided by the school, and to help establish links with community sport clubs. Classroom teachers, on the other hand, appeared to be unfamiliar with how SSPs were utilised in their schools, or with what they did. Typical of their responses: "The [PE Teacher] will explain all that. He has organised the Sporting Schools stuff yeah. That would've been [name], our PE teacher, who did that" (CT1). This suggests limited engagement with the providers by the class teachers when providers run the programs with the class teacher.

Similarly to principals' assertions, the PE teachers shared that they also used external providers to 1. bring an external voice to engage students with a higher level of expertise in the sport than what the PE teacher could provide; 2. provide new or a variety of sports outside of the experience of the PE teacher or facilities within the school; 3. build school connections to community sport opportunities; and 4. provide students with another 'activity session during the

week. These reasons align with previously published literature exploring reasons for the utilisation of external providers or outsourcing of PE in schools (Morgan & Hansen, 2007; Sperka & Enright, 2018; Williams et al., 2011).

Existing research also suggests the utilisation of external providers as a form of professional learning (Morgan & Hansen, 2007; Williams & Macdonald, 2015). Data provided by the PE teachers also confirmed this as a common reason for the PE teacher engaging with SSP. Typical of responses were: "I've used Sporting Schools, predominantly, to support my own learning" (PET6). Another PE teacher elaborated:

> If I have found 2-3 new ideas from having a coach in for a couple of lessons a week. I am like 'oh, that's great'. I can implement that into my teaching and make sure the kids get some of the correct terminology and knowledge and skills that I may not have in every sport. So, I have found that that's to be the best way to using Sporting Schools personally (PET2).

Impacts of Teachers' Perceptions of External Providers

Hogan and Stylianou (2018) reported that the SSP enabled national sporting organisations to ensure funded providers are accredited and registered with their relevant bodies. However, teachers in this study reported that while there are some providers "that are pretty good…there are some that are well below par" (PET2). Throughout interviews, a commonly used phrase was "hit or miss," a colloquialism meaning as likely to be unsuccessful as successful. For example, one teacher shared:

> With Sporting Schools, some people that come out do an amazing job. Some other people, they're okay so but it varies… It's really 'hit and miss' and you go "I won't get those people back again" or "That person's amazing" (Teacher 17).

Two key issues arise from teachers' experiences with the variations in quality of what the external providers offer in schools. The first relates to how PE teachers elect to spend SSP funding, and the second relates to concerns about teachers modelling their approach-

es according to their observations of external providers. Firstly, the inconsistency of standards and the inability to trust the quality of the external providers have discouraged PE teachers in this study from engaging providers through the SSP. Instead, the PE teachers elected to use funding for purchasing equipment, especially when there is a limited school budget for equipment. For example:

> I find it very hit and miss in terms of coaches. So, what we need to do is go 'all right, we will get coaches for maybe 1-2 lessons', and I will kind of pinch [copy, use, steal] some of their ideas and then I will deliver it in more of a beneficial way for the kids. Then I can also have equipment that keeps our stocks good and equipment good and the engagement in that sport good as well (PE 2).

Given the objective of Sporting Schools is for partner organisations (that is, national sporting organisations) to "provide greater professional development opportunities for teachers" (Deloitte Access Economics, 2020, p. 25), the fact that teachers are being 'turned off' from this opportunity impedes the capacity for this investment to achieve what it sets out to achieve.

Secondly, this stated intention of Sporting Schools (to provide professional development opportunities), combined with the multifaceted context of this study's finding of teachers reporting poor- or low-quality experiences offered by external providers (such that they opt not to engage providers) and that many primary school teachers lack PE content and pedagogical knowledge, illuminates another concern. If teachers are unable to discern what constitutes 'quality' in terms of PE delivery (that is educatively purposeful, strengths-based, and with content that aligns to student achievement outcomes) elect to model their future approaches to delivering PE based on their observations of external providers who are not necessarily providing 'quality' experiences, then there is risk to the quality of the teachers' future PE provision. This concern is heightened by Williams and Pill's (2019) suggestion that teachers often fail to use evidence-based documents to formulate or underpin their understanding of what constitutes quality and that there is often "no commonality in how teachers defined quality physical education" (p. 1200).

Learnings from the PEPL project

The PEPL project involved selected external providers working with teachers and in schools. This context provides valuable learning opportunities that cbroaderan be applied within the general Sporting Schools Program context, as well as insights for future sport in school program developers.

External Providers' Connecting to Curriculum Expectations for Student Learning

The 2020 SSP Evaluation noted an "absence of a joined-up approach between education and sporting agencies in the implementation of the SSP" (Deloitte Access Economics 2020, p. 7). Interviews with external providers revealed that they experienced some initial implementation difficulties related to delivering sports in schools. For example, there was a lack of understanding about which classes the external providers were working with, their specific role or component within the project, and their engagement with the professional association. These uncertainties manifested in a few ways. Providers delivered a relatively unchanged program for the project compared to what they had previously offered schools, despite the differences in their period of engagement (i.e., three terms rather than 4-8 sessions). An example of responses within this theme:

> I don't necessarily know how it differentiates or how it's meant to differentiate from what is our traditional Sporting Schools wherefore we're meant to be doing something that's slightly different and the next level or whether. It is literally the same as what we're doing in other schools (EP3).

The project involved a professional association, which was available to provide mentoring and curriculum/educational support to the external providers. This relationship was meant to prevent this situation of delivery uncertainty from occurring, but the opportunity appears not to have been fully utilised by all external providers. External providers recognised were initially not understanding or appreciating the support that the association could offer. However, with time and ongoing engagement, the providers became more understanding of their responsibility to make their programs educationally purposeful. Two of the external providers were very positive

and appreciative of the opportunity to receive in-situ feedback from the professional association education consultant. For example:

> He's [the professional association representative] has been able to come out to a number of our sessions, and with his intimate knowledge of the sport curriculum in both the primary school and the secondary school space, we felt really lucky that we were able to get that feedback (EP1).

Two of the providers held both managerial and coaching positions within their sport. The third provider interviewed, who did not engage in any coaching or active participation in the project and was, instead, responsible for scheduling other coaches to attend schools, declined to encourage observation and feedback of the coaches they delegated to schools. They expressed the perspective that it was unfair to put their coaches in the position of being observed when they were not fully cognisant of the project and its objectives. From this, we understand that professional associations are well-positioned to provide important advice and support to national sporting organisations working within schools. However, for these external providers to acknowledge their contributions, there must be recognition of their value. Further, trust and rapport between a professional mentor and external provider are essential to enhancing the learning potential of an SSP (Patton et al., 2005).

External Providers as a Learning Opportunity for Teachers

During this project, the external providers were able to deliver a lesson during curriculum time, as taken by the classroom teacher (i.e., not during specialist PE lesson time). This was designed to provide classroom teachers with the opportunity to observe and directly work with external providers. In this study, the classroom teachers indicated that outside this project, they had little previous opportunity to attend PE-specific professional development activities. However, in contrast to previously published literature indicating the potential for external providers to deliver primary school teacher professional development (Morgan & Hansen, 2007; Williams & Macdonald, 2015), interviews with classroom teachers in this study suggested that they did not necessarily utilise the external provider presence as a learning opportunity. As earlier noted, when asked about SSP, the classroom teachers all deferred to the PE teachers.

Data from this study indicate that classroom teachers felt further learning was not required. Typically, in the existing literature, primary school classroom teachers have reported that they lack confidence and competence to deliver a quality PE program (Morgan & Hansen, 2008). It is possible that in this study, PE was perceived by the classroom teachers as being the responsibility of the specialist PE teachers and thus the external providers. Having typically been initiated by the specialist PE teacher, it meant that it was not something the classroom teachers needed to pay attention to. It may also be that the classroom teachers did not recognise or believe that the external provider-delivered sessions offered an effective learning opportunity for them. Here, we refer to our earlier reporting that the quality of sessions delivered by external providers is perceived as "hit or miss."

In contrast to comments from the classroom teachers, the external providers reported greater engagement from teachers in this project compared to their delivery of sessions in other schools (not involved in this project). The providers shared that external to this project, they were aware that teachers observed them to see "exactly how we run these sessions" (EP2), but that within this project, there was an enhanced level of interest in what the providers were doing. They believed the teachers asked more questions about skill development, games, and small group management than in their other school program deliveries. Typical of the external provider comments, “more intentionally [engaging] with the teachers in the project than what we would normally do with Sporting Schools” (EP1).

Within regular SSP delivery, external providers provide between 4-8 sessions. In this project, engaging with the same teachers and students over three terms might have provided the external provider perception that there was greater rapport between teachers and providers. If we are to accept the external providers’ understanding of events, then a future consideration for the SSP might be to explore the potential for extending the sessions beyond the current 4-8, such that teachers and external providers might engage more meaningfully and with learning purposes in mind.

Readiness to Provide an Educatively Purposeful Program

The professional association involved in the project maintains a clear position on the role and responsibilities of external providers and teachers in delivering HPE in schools, consistent with the

description detailed in the introduction. According to one of the professional association representatives, it is important to be "really clear" about what is PE curriculum time and what is PA time in the school schedule, especially regarding services provided by the external providers. This person emphasised that, "anything within curriculum time needs to have that real focus on educative purpose, focus and linking [to the Australian Curriculum]." Interviews with representatives from the professional association and external providers revealed varying degrees of readiness among external providers to undertake educationally purposeful work that extended beyond the provision of "just" a sports session.

Through serving as mentors to the external providers in this program, the professional association representatives considered that many SSP providers need substantial support to ensure they are delivering a program that aligns with the AC: HPE and provides students with a PE experience rather than an incursion PA sport experience. For example:

> They [external provider SSP] don't relate to the Australian curriculum; the coaches can't talk about Australian curriculum and where it [their program] fits. It's the unusual coach that can do that, so they need a lot of support to be effective in that [school] environment (PAPrR1).

SSP that align with the curriculum are believed to increase relevance to schools and enhance program credibility (Australian Sports Commission, 2017). Attention to this by national sporting organisations is necessary and may present as a strategic way to be more appealing to schools (Hogan & Stylianou, 2018), as alignment with the curriculum directly addresses the need of teachers to report student attainment against curriculum standards.

There was also a view from the professional association representatives that one of the core tenets of the SSP, the use of a Game Sense coaching approach (Sport Australia, 2021b), was not understood by the coaches in this project. They considered that the external providers understood the benefits and techniques of keeping students engaged as a sound pedagogical approach to games and sport in PE (Light, 2014; Pill, 2011). However, what the coaches understood as a 'game sense approach' was not what they were facilitating with students.

> They thought they were using a game sense approach. They know the language; they know the words but when I provided the feedback, I said why did you teach the skills first? And they said because they needed the skills to play the games. I said "well, that's not a game sense approach". In a game sense approach, you play the game first and then you use the game as the springboard into teaching the kids what they need to successfully play the game. (PAPr1)

One sport (Net/court sport) had a program resource developed in accordance with the AC: HPE and with lesson plans consistent with the Game Sense approach for schools and coaching providers to use in teaching their sport in schools. However, even with this one sport, the professional association representative found the coaches offering the SSP lacked knowledge of the sport program resource provided by the national sport body to guide educationally aligned work in schools. The other two sports (Invasion game sports 1 and 2) lacked a similar resource to guide coaches working in SSP. The observations suggest there is more work to be done by external providers and their national or state sporting organisations to be ready to engage within the AC: PE focus area of Games and Sports in a strengths-based, educationally purposeful manner, meeting the remit of the SSP. Potentially, the outsourcing of sport teaching in primary school PE constrains and possibly presents a naive understanding of curriculum content expectations and appropriate pedagogy to primary school teachers (Sperka & Enright, 2018).

While all three external providers considered their coaches to be 'professional' due to the paid nature of their engagement, there were differences in how coaching was perceived, with some viewing it as a career or vocation, while others saw the coaching workforce as a highly transient and often temporary or casual one. An example of the latter was the reference to the expectation that: "realistically, I expect them to disappear after two to three years when uni is done" (EP3). It is perhaps not unrealistic then to consider that how the external provider coaches were positioned within the broader sport organisation would impact their capacities (and potentially desire or motivation) to be educatively purposeful in implementation of sport in schools' programs (Buddelmeyer et al., 2013).

One provider shared that it was good for their coaches to be exposed to this program as this will help the coaches "build their skills as to how they can better manage that in the future" (EP1). The more extended period of engagement during the school year also provided increased opportunity for the external providers to develop their insights into class and teacher dynamics. For example, one EP reported "each of the teachers have their own individual class routine and understanding of how they work within their class environment… that created a wonderful understanding for us, through that consistency." Working within the same project also enabled the three different sports, which otherwise would be unlikely to come together, to develop rapport, discuss approaches, and recognise the similarities between their practices and goals (albeit within different sport codes). In this way, they were able to develop a learning community/community of practice (Wenger-Trayner & Wegner-Trayner, 2015), which they recognised as something different and valuable. Illustrating this:

> I think we're all in this business to get kids active. It is valuable sharing and hearing from other codes, I suppose, because more often than not, they've probably come across the same issue I have, and if you chat and you can work out 'I've had that as well' and see how they've – see if we can apply it to our sport. It was great to sit down and talk with those guys (EP2).

Professional learning communities are widely advocated within continuing professional development programs for teachers (Armour & Yelling, 2004, 2007; Beni et al., 2021) and identified by Sport Australia, in "supporting the development, education and training of coaches" (Australian Sports Commission, n.d.-b). Like that described by Garner and Hill (2017), it was the EP2s' perspective (outlined above) that the external coaches from different sports benefited from insights into the practices of others. There did not appear to be feelings of competition between the different sport providers as has been observed previously (Lemyre et al., 2007).

Despite the positive aspects recognised by the sport providers from their engagement in the project, interviews with the Education Department staff involved in the project indicated that they believed one of the sport providers was not interested in the partnership area

they had been assigned. This was attributed to the lack of local community clubs for that sport in the area where the schools the provider was allocated to work with were located. This highlights the importance of aligning the sport with community opportunities, as sport providers are not altruistic in their approach to schools (Hogan & Stylianou, 2018), and the provision of sport in school programs is a business decision (Allen et al., 2024).

Conclusion

This study included an analysis of data provided by a range of stakeholders involved in the implementation of a year-long PE project that included a sport in schools program in curriculum time. Key insights include that teachers' perceptions about the quality of sport in schools' programs being "hit or miss" highlight concerns about the quality of some external sport providers' curriculum offerings for schools. Further, conflicting ideas concerning the extent to which teachers utilise external providers for professional development to enhance their content and pedagogical ability to deliver quality PE were evident. Additionally, this study highlighted that there are varying degrees of readiness of external providers to participate in educationally purposeful and pedagogically sound sport experiences in lieu of class teacher provision of PE in primary schools.

A limitation of this study is that only three external providers were involved across the 14 schools in the project, which was delivered in one Australian state. Further research with primary schools and external providers across the range of sports providing sport in schools programs in place of PE, alongside PE, or in addition to PE is needed to understand whether the outsourcing of PE teaching and school sport experiences is beneficial to Australian primary school teachers and students' attainment of student movement and participation achievement expectations.

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*"Generalist" refers to a teacher who is responsible for teaching across all learning areas (Mills et al., 2020).

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References

Allen, J., Quarmby, T., & Dillon, M. (2024). 'To a certain extent it is a business decision': Exploring external providers' perspectives of delivering outsourced primary school physical education. *Sport, Education and Society, 29*(9), 1099–1139.

Armour, K. M., & Yelling, M. R. (2004). Continuing professional development for experienced physical education teachers: Towards effective provision. *Sport, Education and Society, 9*(1), 95–114.

Australian Curriculum, Assessment and Reporting Authority (ACARA). (2021). *Health and Physical Education (Version 8.4).* https://www.australiancurriculum.edu.au/f-10-curriculum/health-and-physical-education/

Australian Sports Commission. (2017). *Curriculum alignment guidelines for the sport sector.*

Australian Sports Commission. (2024). *Grant guidelines, Terms 2–4, 2024.* https://www.sportaus.gov.au/__data/assets/pdf_file/0007/1137472/Sporting-Schools-Grant-Guidelines-Term-2-4-2024.pdf

Australian Sports Commission. (n.d.-a). *Funding.* https://www.sportaus.gov.au/schools/schools/funding

Australian Sports Commission. (n.d.-b). *Community coaching.* https://www.sportaus.gov.au/coaching

Beni, S., Fletcher, T., & Ní Chróinín, D. (2021). Teachers' engagement with professional development to support implementation of meaningful physical education. *Journal of Teaching in Physical Education, 41*(4), 1–10.

Bourke, T., Mills, R., & Siostrom, E. (2020). Origins of primary specialisation in Australian education policy: What's the problem represented to be? *The Australian Educational Researcher, 47*(5), 725–740.

Bowles, R., & O'Sullivan, M. (2020). Opportunity knocks: The intersection between schools, their teachers and external providers of physical education and school sport. *Discourse: Studies in the Cultural Politics of Education, 41*(2), 251–267.

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic analysis. In P. Liamputtong (Ed.), *Handbook of research methods in health social sciences* (pp. 843–860). Springer.

Buddelmeyer, H., Leung, F., McVicar, D., & Wooden, M. (2013). *Training and its impact on the casual employment experience* (pp. 1–56). National Vocation Education and Training Research Program.

Deloitte Access Economics. (2020). *Sporting schools program evaluation final report.* https://www.health.gov.au/sites/default/files/documents/2021/08/sporting-schools-program-evaluation.pdf

Dollman, J., Boshoff, K., & Dodd, G. (2006). The relationship between curriculum time for physical education and literacy and numeracy standards in South Australian primary schools. *European Physical Education Review, 12*(2), 151–163.

Dyson, B., Gordon, B., Cowan, J., & McKenzie, A. (2016). External providers and their impact on primary physical education in Aotearoa/New Zealand. *Asia-Pacific Journal of Health, Sport and Physical Education, 7*(1), 3–19.

Garner, P., & Hill, D. M. (2017). Cultivating a community of practice to enable coach development in alpine ski coaches. *International Sport Coaching Journal, 4*(1), 63–75.

Hardman, K. (2008). Physical education in schools: A global perspective. *Kinesiology, 40*(1), 5–28.

Hardman, K., & Marshall, J. (2001). World-wide survey on the state and status of physical education in schools. In G. Doll-Tepper & D. Scoretz (Eds.), *World summit on physical education proceedings* (pp. 15–37). International Council of Sport Science and Physical Education.

Hardman, K., & Marshall, J. (2005, December 2). *Update on the state and status of physical education world-wide.* World Summit on Physical Education. https://www.icsspe.org/sites/default/files/Ken%20Hardman%20and%20Joe%20Marshall-%20Update%20on%20the%20state%20and%20status%20of%20physical%20education%20world-wide.pdf

Harris, J., Cale, L., & Musson, H. (2012). The predicament of primary physical education: A consequence of 'insufficient' ITT and 'ineffective' CPD? *Physical Education and Sport Pedagogy, 17*(4), 367–381.

Hogan, A., & Stylianou, M. (2016). School-based sports development and the role of NSOs as 'boundary spanners': Benefits, disbenefits and unintended consequences of the Sporting Schools policy initiative. *Sport, Education and Society, 23*(4), 367–380.

Lemyre, F., Trudel, P., & Durand-Bush, N. (2007). How youth-sports coaches learn to coach. *The Sport Psychologist, 21*, 191–209.

Light, R. (2014). Quality teaching beyond games through Game Sense pedagogy. *University of Sydney Papers in HMHCE – Special Games Sense Edition 2014*, 1–13.

Lynch, T., & Soukup Sr., G. J. (2017). Primary physical education (PE): School leader perceptions about classroom teacher quality implementation. *Cogent Education, 4*(1). https://doi.org/10.1080/2331186X.2017.1348925

Morgan, P. J., & Hansen, V. (2007). Recommendations to improve primary school physical education: Classroom teachers' perspective. *The Journal of Educational Research, 101*(2), 99–108.

Morgan, P. J., & Hansen, V. (2008). Physical education in primary schools: Classroom teachers' perceptions of benefits and outcomes. *Health Education Journal, 67*(3), 196–207.

Ní Chróinín, D., & O'Brien, N. (2019). Primary school teachers' experiences of external providers in Ireland: Learning lessons from physical education. *Irish Educational Studies, 38*(3), 327–341.

Patton, K., Griffin, L. L., Sheehy, D., Arnold, R., Gallo, A. M., Pagnano, K., & James, A. R. (2005). Navigating the mentoring process in a research-based teacher development project: A situated learning perspective. *Journal of Teaching in Physical Education, 24*(4), 302–325.

Penney, D., Brooker, R., Hay, P., & Gillespie, L. (2009). Curriculum, pedagogy and assessment: Three message systems of schooling and dimensions of quality physical education. *Sport, Education and Society, 14*(4), 421–442.

Pill, S. (2007). Physical education—what's in a name? A praxis model for holistic learning in physical education. *ACHPER Australia Healthy Lifestyles Journal, 54*(1), 5–10.

Pill, S. (2011). Seizing the moment: Can Game Sense further inform sport teaching in Australian physical education? *PHENex Journal, 3*(1), 1–15.

Pill, S., & Harvey, S. (2019). A narrative review of children's movement competence research 1997–2017. *Physical Culture and Sport. Studies and Research, 81*(1), 47–74.

Professional Association. (2021). *External providers for schools.* https://www.achpersa.com.au/common/Uploaded%20files/ASA/Position%20Statements/External%20Providers%20for%20Schools.pdf

Redelius, K., & Larsson, H. (2010). Physical education in Scandinavia: An overview and some educational challenges. *Sport in Society, 13*(4), 691–703.

Sperka, L., & Enright, E. (2018). The outsourcing of health and physical education: A scoping review. *European Physical Education Review, 24*(1), 349–371.
Sperka, L., Enright, E., & McCuaig, L. (2018). Brokering and bridging knowledge in health and physical education: A critical discourse analysis of one external provider's curriculum. *Physical Education and Sport Pedagogy, 23*(3), 328–343.
Spittle, S., Spittle, M., & Itoh, S. (2022). Outsourcing physical education in schools: What and why do schools outsource to external providers? *Frontiers in Sports and Active Living, 4*, 854617.
Stylianou, M., Woodforde, J., Duncombe, S., Kolbe-Alexander, T., & Gomersall, S. (2022). School physical activity policies and associations with physical activity practices and behaviours: A systematic review of the literature. *Health & Place, 73*, 102705.
Telford, R. M., Olive, L. S., & Keegan, R. J. (2021). Student outcomes of the physical education and physical literacy (PEPL) approach: A pragmatic cluster randomised controlled trial of a multicomponent intervention to improve physical literacy in primary schools. *Physical Education and Sport Pedagogy, 26*(1), 97–110.
The PEPL Approach. (2021). *The PEPL approach*. https://www.peplapproach.com.au/
Tinning, R., & Fitzclarence, L. (2012). Postmodern youth culture and the crisis in Australian secondary school physical education. *Quest, 44*(3), 287–303.
Wenger-Trayner, E., & Wenger-Trayner, B. (2015). *Introduction to communities of practice*. https://www.wenger-trayner.com/introduction-to-communities-of-practice/
Whipp, P. R., Hutton, H., Grove, J. R., & Jackson, B. (2011). Outsourcing physical education in primary schools: Evaluating the impact of externally provided programmes on generalist teachers. *Asia-Pacific Journal of Health, Sport and Physical Education, 2*(2), 67–77.
Williams, B. J., Hay, P. J., & MacDonald, D. (2011). The outsourcing of health, sport and physical educational work: A state of play. *Physical Education and Sport Pedagogy, 16*(4), 399–415.
Williams, B. J., & MacDonald, D. (2015). Explaining outsourcing in health, sport and physical education. *Sport, Education and Society, 20*(1), 57–72.

Williams, J., & Pill, S. (2019). What does the term 'quality physical education' mean for health and physical education teachers in Australian Capital Territory schools? *European Physical Education Review, 25*(4), 1193–1210.

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SPORT EDUCATION

Effects of Weight Training Sport Education Model on Fitness Levels and Knowledge in University Physical Activity Courses

Tony Pritchard, Andrew Hansen, and Christine Johnson

Abstract

The purpose of this study was to investigate the impact of the Sport Education Model (SEM) and the Direct Instruction Model (DIM) on fitness levels, content knowledge, and enjoyment of weight training among university students. A 15-week weight training course was completed by 157 students enrolled in one of three SEM courses or three DIM courses. Students met twice a week for 50 minutes each day. Pre- and post-tests consisted of the bench press strength to mass ratio, FITNESSGRAM components, percent body fat, push-ups, and curl-ups to determine a fitness level score. Fitness knowledge was measured with a 50-question content knowledge test. Participants completed an online survey at the end of the semester. Results indicated a significant time effect for the strength-to-mass ratio, fitness levels, and the content knowledge test. There was a group-by-time effect for the push-ups and curl-ups, with the SEM outperforming the DIM. Survey results revealed that both groups enjoyed certain aspects of the weight training courses.

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The SEM group had a positive experience due to the components of the SEM that included team affiliation and a team points contest. The results suggest that the SEM is an effective instructional model for promoting fitness levels, content knowledge, and enjoyment in university weight training physical activity courses.

Introduction

The American College Health Association (ACHA, 2024) found that 43.3% of university students were overweight or obese in the spring of 2024, based on Body Mass Index calculations. University students reported 42.7% met the guidelines for an active adult in the same fall semester (ACHA, 2024). The US Department of Health and Human Services (USDHHS, 2018) defines an active adult as one meeting the recommendations for aerobic activity and strength training. Aerobic activity includes 150 minutes or more of moderate-intensity physical activity per week, or 75 minutes of vigorous-intensity physical activity, or an equivalent combination (USDHHS, 2018). Strength training involves two or more days a week of moderate to high-intensity activities that target all major muscle groups (USDHHS, 2018). The ACHA (2024) reported that 33.8% of university students met the guidelines for highly active adults. Highly active adults are defined as those who meet the recommendations for strength training and twice the recommendations for aerobic activity (USDHHS, 2018). These numbers demonstrate that university students need opportunities to increase their physical activity levels to promote lifelong health. Effective higher education physical activity (PA) instructional programs can provide the opportunity that university students need to improve their overall health. Society of Health and Physical Educators (SHAPE) America (2021) states a major outcome of PA programs in higher education is "… to build upon this foundation and educate students to continue the journey to enhance well-being, and live healthy, physically active lives" (p. 5).

Teaching effectiveness is crucial in implementing a quality PA program. To be an effective instructor, it is essential to choose an appropriate instructional model. Metzler and Colquitt (2021) describe eight instructional models a teacher can utilize in physical education, including PA university programs. Of these eight models, the Sport Education Model (SEM) and Direct Instruction Model (DIM)

are two of the more popular models. The SEM encourages students to become competent, literate, and enthusiastic in the activity being taught by using the six characteristics, including: 1) season, 2) affiliation, 3) record keeping, 4) formal competition, 5) culminating event, and 6) festivity (Siedentop et al., 2019). The DIM is a teacher-led model in that the teacher has total control of the learning environment (Metzler & Colquitt, 2021).

SEM research has predominantly focused on sports (e.g., basketball, volleyball, badminton), with very little research dealing with how the model affects the content of fitness. Hastie, Buchanan, Wadsworth, and Sluder (2009) were among the first to demonstrate a positive effect on aerobic fitness utilizing the SEM in fitness when investigating fifth graders following an obstacle course fitness season. Pritchard et al. (2015) researched the SEM in a fitness season for high school students. Results were promising with participants averaging 60.47% moderate to vigorous physical activity (MVPA) while increasing fitness levels and fitness knowledge. Other researchers investigated the impact the SEM had during a fitness season for fifth graders (Ward et al., 2017). Participants significantly increased fitness levels and fitness knowledge while averaging 54.5% MVPA during the fitness season (Ward et al., 2017). The research thus far has been promising, but little research has measured the impact of the SEM at the university level.

The research on the SEM at university PA programs revealed that university students perceived they learned more in the SEM class than in any other physical activity class, and 90% of those students reported they would take another course taught using the SEM (Bennett & Hastie, 1997). Students' ratings of progress of selected learning objectives were high, and ratings of teaching effectiveness were high in university PA courses that utilized the SEM (Mohr et al., 2012). Little research has been conducted to determine the effects of the SEM on weight training, including at college/university levels. The purpose of this study was to investigate the impact of the Sport Education Model (SEM) and the Direct Instruction Model (DIM) on fitness levels, content knowledge, and enjoyment of weight training among university students.

Methods

Design

This study involved a two (group) x two (time) design. All variables were measured in all weight training classes during pre-testing at the beginning of the semester and post-testing at the end of the semester.

Participants and Setting

The study was administered in six university PA weight training courses at a public university located in the southeastern United States. The weight training courses met during the university spring session for fifty minutes, two days a week, for a total of 29 lessons. On the first day of class, instructors reviewed the course syllabus and the purposes of the current study with students. Participants included 157 university students (115 males and 42 females) with an age range of 18 to 39 (M = 20.08, SD = 3.09). University students signed up for one of the six weight training courses, and each course was randomly assigned to the SEM group or the DIM group. The SEM and DIM groups comprised 77 and 80 participants, respectively. Participation was voluntary, and no extra credit was provided. The Institutional Review Board for the Protection of Human Subjects approved the investigation prior to data collection.

Instrumentation

Bench Press Strength to Mass Ratio

The bench press strength to mass ratio (SMR) (Harman, 2008) was determined by measuring a participant's one-repetition maximum lift (1RM) on the bench press in pounds and dividing the 1RM by the participant's body weight in pounds. The SMR provides a more accurate measurement of muscular strength compared to the 1RM test alone. The research team and teachers followed the 1RM testing protocol described by Earle (2006), then calculated participants' SMR.

Fitness Levels

Fitness levels were assessed using percent body fat, curl-ups, and push-ups. Percent body fat was measured using handheld bio-

electric impedance analyzers. The curl-ups and push-ups were measured using the FITNESSGRAM protocol (Meredith & Welk, 2010). Components were administered by the research team and teachers who had prior experience executing the FITNESSGRAM components through undergraduate physical education method courses. Comprehensive training entailed multiple administrations of the FITNESSGRAM to their peers, meeting 98.7% inter-observer agreement with the instructor.

Knowledge Test

A 50-question multiple-choice test was used to measure weight training knowledge, with questions chosen from the test bank by McGee and Farrow (1987). The knowledge test had no data quality coefficients, but other researchers have effectively used the test bank (French et al.,1996a; French et al., 1996b; Pritchard et al., 2008). Safrit and Wood (1995) considered the test bank, "the best source of test items for sport" (p. 421). Each participant's score reflected the total number of correct responses, with a maximum possible score of 50. The test was administered to Physical Education Teacher Education (PETE) majors the semester before data collection for the current study. It was evaluated by a Certified Strength and Conditioning Specialist from the National Strength and Conditioning Association to further establish content validity.

Teachers and Intervention Verification

The two teachers were graduate students who were trained using the SEM and DIM during undergraduate and graduate programs located at the university. The teachers had experience implementing both models at the secondary and university levels before beginning the current study. To ensure the SEM and DIM were appropriately implemented, researchers followed the teacher and student benchmarks of the SEM and DIM described by Metzler and Colquitt (2021). Both models met all teacher and student benchmarks of the SEM and DIM during the study.

Procedures for Data Collection

Participants were provided with a study description on the first day of the weight training course. The knowledge test, bench press, SMR, and fitness levels (i.e., percent body fat, curl-ups, and push-

ups) were tested on lessons two to four. After pre-testing was completed, the teachers taught the weight training courses using SEM or DIM, depending on which class was randomly assigned to each. At the end of the semester, post-testing occurred following the same procedures as the pre-testing.

Weight Training Season/Unit

Sport Education Model Season

The SEM weight training season was divided into three phases: the pre-season, mid-season, and post-season. During the pre-season, participants were assigned to teams by the teachers based on their fitness levels. Participants conducted daily roles (i.e., coach, fitness trainer, equipment manager, statistician, substitute, and reporter) for each phase of the season. In the pre-season lessons, the teachers taught the techniques and content necessary to initiate a weight training program effectively. At the beginning of the lesson, the assigned fitness trainers warmed up the teams while the team coaches met with the teacher to review the coaching plan. The coaching plan included content that students would need to know for the lesson, such as what exercises would be utilized, the muscles activated for the exercises, and any other content knowledge the teachers were teaching for the lesson. Coaches then peer-taught the information from the coaching plan to their teams, after which the teachers taught the weightlifting exercises that the teams would execute during the lesson. Participants practiced the exercises, then performed the lesson's daily workout plan. A lesson closure was provided at the end of the lesson to review the weight training exercises learned, along with cues and muscles activated in the pre-season lesson.

During the mid-season and post-season, teams competed against one another to earn points and become team champions. Points were awarded throughout the season by wearing team colors, performing the team cheer, and performing daily roles. Periodically during the mid-season and post-season, teams competed against each other with team contests such as a push-up contest, a lifting form contest, and a 5RM contest. The team with the most points at the end of the season was the champion of the weight training season. The SEM champions received certificate awards at the end of the weight train-

ing season, along with individual awards (e.g., Most Improved, Team Before Self).

Direct Instruction Model Unit

The DIM weight training unit enabled participants to learn correct weight training techniques and identify the muscles activated during exercises. At the beginning of each lesson, the teachers led all participants in a warm-up routine. After the warm-up routine, teachers taught the weight training exercises, including the technique and muscles activated. Unlike the SEM, participants were not put on teams, nor did they have daily roles. They were put in two groups where one group performed upper-body exercises, and the second group performed lower-body exercises. During the next lesson, the groups would switch exercises. The DIM participants did not compete against one another like the SEM participants. This format was followed for the entire weight training course. No awards were given to the DIM participants.

Survey

Upon completion of the post-testing of the 1RM bench press, fitness levels, and knowledge test, participants were sent a link to an online survey to gather data on their perceptions of the SEM and DIM weight training courses. Surveys comprised the following six questions: 1) What did you like most about this weight training course? 2) What did you like least about this weight training course? 3) How did you like being on a team during the weight training course? Please state why or why not. 4) Did you think being on a team helped you be motivated in the weight training course? Why or why not? 5) Did the point contest motivate you to be a part of the team and improve in the weight training course? Why or why not? 6) Is there anything you would like changed in the weight training course? If yes, please provide any suggestions. The answers to the questions were analyzed to identify emerging themes from the participants.

Data Analysis

IBM SPSS Statistics for Windows, version 25 (IBM Corp., Armonk, N.Y., USA) was used to perform two (time) × two (group) repeated measure Analysis of Variances (ANOVAs) with a priori al-

pha set at .01 due to a Bonferroni Adjustment. The repeated measure ANOVAs were evaluated on the following dependent variables: 1) bench press strength to mass ratio; 2) percent body fat; 3) curl-ups; 4) push-ups; 5) knowledge test.

Results

Descriptive statistics were generated on the dependent variables, including 1) bench press strength to mass ratio; 2) percent body fat; 3) curl-ups; 4) push-ups; and 5) knowledge test, and are provided for SEM and DIM in Table 1.

Table 1
Descriptive Statistics for Strength to Mass Ratio, Fitness Scores, and Knowledge Test

Sport Education Model (n = 77)	Pretest	Posttest
Bench Press Strength to mass ratio	0.93 (0.04)	1.04 (0.04)
Percent body fat	18.75 (0.95)	18.04 (0.89)
Curl-up test	33.05 (2.27)	48.69 (2.55)
Push-up test	18.62 (1.28)	24.43 (1.23)
Knowledge test	26.87 (0.66)	38.01 (0.63)
Direct Instruction Model (n = 80)		
Bench Press Strength to mass ratio	0.99 (0.04)	1.10 (0.04)
Percent body fat	18.65 (0.93)	17.34 (0.87)
Curl up test	39.05 (2.21)	45.19 (2.49)
Push up test	20.84 (1.25)	23.22 (1.20)
Knowledge test	27.19 (0.64)	36.81 (0.62)

Note: Descriptive scores expressed as means with standard error.

Bench Press Strength to Mass Ratio

A two (time) × two (group) repeated measure ANOVA revealed a significant time main effect [F (1, 155) = 159.68, $p < .01$, $\eta^2 = .51$] for the bench press strength-to-mass ratio. There was no significant

group effect [F (1, 155) = 1.53, p > .01] or a time by group interaction [F (1, 155) = 0.34, p > .01].

Percent Body Fat

A two (time) × two (group) repeated measure ANOVA revealed a significant time main effect [F (1, 155) = 10.4, p < .01, η^2 = .06] for percent body fat. There was no significant group effect [F (1, 155) = 0.10, p > .01] or a time by group interaction [F (1, 155) = 0.92, p > .01].

Curl-ups

A two (time) × two (group) repeated measure ANOVA revealed a significant time main effect [F (1, 155) = 62.13, p < .01, η^2 = .29] and a significant time by group interaction [F (1, 155) = 13.18, p < .01, η^2 = .08] for curl-ups. There was no significant group effect [F (1, 155) = 0.21, p > .01].

Push-ups

A two (time) × two (group) repeated measure ANOVA revealed a significant time main effect [F (1, 155) = 64.67, p < .01, η^2 = .29] and a significant time by group interaction [F (1, 155) = 11.14, p < .01, η^2 = .07] for push-ups. There was no significant group effect [F (1, 155) = 0.14, p > .01].

Knowledge Test

A two (time) × two (group) repeated measure ANOVA revealed a significant time main effect [F (1, 155) = 387.29, p < .01, η^2 = .71] for the knowledge test. There was no significant group effect [F (1, 155) = 0.16, p > .01] or a time by group interaction [F (1, 155) = 1.82, p > .01].

Survey Data

Participants completed an online survey to elicit their perspective on the qualities of the weight training course. The specific quotes shown here were used to convey the meaning of both positive and negative feelings. To distinguish participant quotes, each quote is followed by the identification number of the participant's answer to the question (e.g., ID P4).

Figure 1
Curl-up Test Interaction

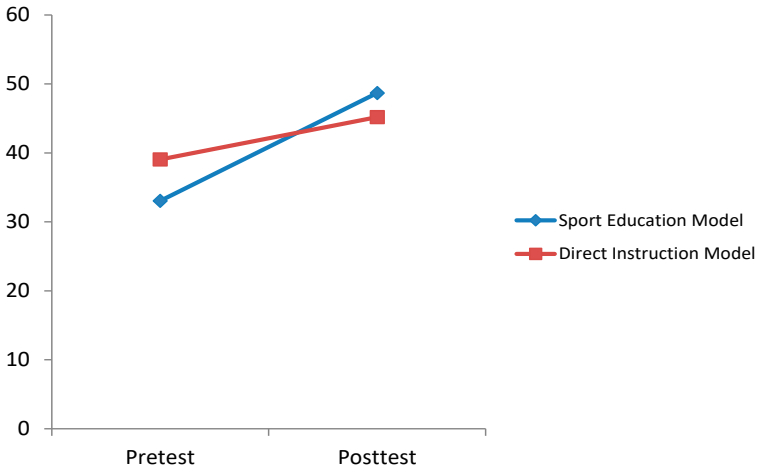
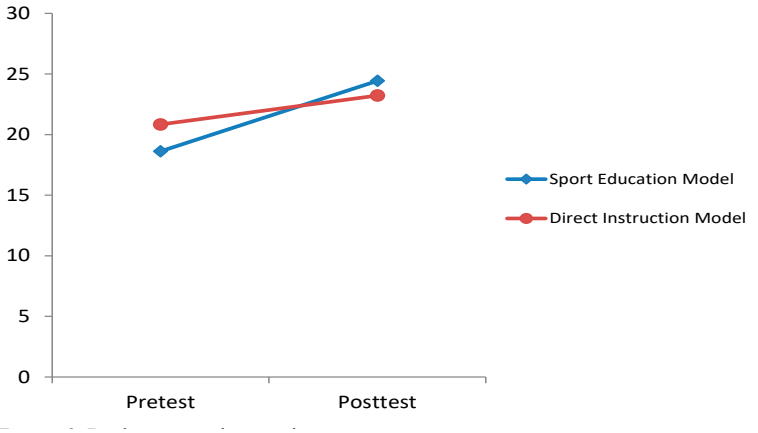


Figure 2
Push-ups Test Interaction



What Did You Like Most About This Weight Training Course?

Participants in both the SEM and DIM weight training courses appreciated learning how to perform weight training exercises properly and discovering new exercises. Both groups also enjoyed working out to improve their strength while earning course credit and having a routine to follow, which was provided by the teachers. The SEM participants liked being part of a team using team notebooks,

and the independent teams worked out with their teammates. "The independence we had during class, where we mostly just worked as a team instead of tedious things the instructor told us to do" (ID P73). The DIM participants were divided into two groups, with one group performing upper-body exercises and the other group performing lower-body exercises during a lesson. They then switched exercises in the next lesson, but no affiliation was established for the DIM participants. The DIM participants liked how the lessons were structured and learning new techniques in weightlifting taught by the teachers, "My teacher for challenging us and the workout guides for upper and lower body" (ID P105).

What Did You Like Least About This Weight Training Course?

One theme emerged in the survey data, with both groups stating that the time of the course was too short, or only met twice a week. Some of the SEM participants did not like having to wear team colors for class. These participants were unhappy if a team member did not wear team colors; then the team only earned a certain number of points for that lesson. Additionally, some participants wanted to work out on their own with little structure, "that we were the research group and had to work out at his pace and not our own" (ID P12). A few participants in both the SEM and DIM groups wanted to exercise using their own workout routine. The weight training course is designed to educate all participants on proper weight training exercises and workout routines, which are based on periodization. If teachers allowed participants to work out on their own, the workout routines may not be developmentally appropriate, so routines were designed to enhance student learning in both groups.

How Did You Like Being on a Team During Weight Training Class?

This question was asked to the SEM participants because the DIM participants were not placed on teams. Most of the SEM participants liked and enjoyed being on a team. "I liked it a lot, it gave you friends to workout with to help you and push you to become better" (ID P42). Participants stated that being on a team had a motivation factor to exercise harder, plus they did not want to let their teammates down. One participant wrote, "I liked it because it gave a sense of tenacity, and you didn't want to let your teammates down"

(ID P6). Participants liked being on a team because they got to meet their classmates. "I actually really liked it because it made me work harder. I also met new people in my class, and it was fun working with them and getting to know them better!" (ID P15). Although most participants thought the teams were positive, as mentioned in the previous question, some participants did not appreciate being on a team because they had to wear the same-colored shirt or had to work out with their team instead of working out on their own.

Did You Think Being on a Team Helped You Be Motivated in the Weight Training Class?

This question was asked of the SEM participants because the DIM participants were not placed on teams. Thirty-four participants responded with a yes to this question. These participants believed the team was a motivating factor. The team concept encouraged participants to work out harder and push themselves to get stronger because they did not want to let their teammates down. "Yes, because you did not want to let your teammates down" (ID P15). Eleven participants responded to this question with a no, with some of the participants responding that they are self-motivated, or they preferred to work out alone. The remaining 33 participants stated that it somewhat motivated them or did not respond to the question.

Did the Point Contest Motivate You to be Part of the Team and Improve in the Course?

This question was asked of the SEM participants because that group was earning points for their team, while the DIM participants were not on teams. Of the responses, 28 SEM participants stated that yes, the point contest was a motivating factor. "Yes, because I didn't want to let my team down and a contest helps you to push harder… because I like to win" (ID P31). Ten SEM participants stated that the contest somewhat motivated them because they wanted to help the team. Some team members did not care about the contest. This lack of enthusiasm by some team members was discouraging for those who answered somewhat. Of the 10 participants who stated "no" to the point contest being motivating, they felt the contest was childish, they wanted to work out on their own, or they also had unenthusiastic team members. Twenty-seven SEM participants did not answer this question.

Is There Anything You Would Like Changed in the Weight Training Course? If Yes, Please Provide Any Suggestions

Participants in both the SEM and DIM weight training courses were asked this question. Most participants stated that they had no response or no intention of changing anything in the weight training courses. Of those participants who stated "yes," most responses were to have more time, such as having class three times a week, more class time than the fifty minutes assigned for each lesson, or allowing participants to exercise on their own. A minority of the SEM participants did not like wearing team colors for each lesson or participating in team cheers.

Discussion

The findings of the current study demonstrate that both SEM and DIM participants made significant gains in strength-to-mass ratio and content knowledge. These findings were expected because both groups were taught how to effectively participate in weight training. Both groups were provided with exercise workouts to improve upper-body strength, thereby enhancing their one-repetition maximum lift (1RM) in the bench press. By increasing the 1RM, the strength-to-mass ratio increased. What differed between the groups in the current study was how the exercise workouts were provided and how the participants executed them. The SEM group provided exercise workouts to their teams. Each team would have a different exercise workout to improve overall strength using periodization and the equipment available in the weight training facility. Participants exercised with their team, and then, periodically, a team contest was held for teams to compete for team points. For the DIM group, participants were placed in mini-groups and then provided with different exercise workouts to improve overall strength using periodization and the equipment available in the weight-training facility. One of the mini-groups would execute upper-body exercises in one lesson, while a different group would execute lower-body exercises. They would switch in the next lesson. The teachers used this strategy due to the availability of equipment. All DIM mini-groups could not start on the same exercise workout, as participation time would have been limited due to the large number of participants waiting. The teachers were effective in teaching the proper techniques in the exer-

cises performed in class and provided appropriate exercise workout plans for both the SEM and DIM groups.

The teachers were also effective in teaching weight training content knowledge to both groups. These findings are supported by other SEM research, which has measured an increase in content knowledge for various types of activities (Pritchard et al., 2008; Pritchard et al., 2015; Pritchard et al., 2019). The difference in teaching was based on the instructional model utilized in the weight training courses. The SEM group was provided with course materials that included coaching plans, which the coaches used to review previously taught content from the teachers. When teachers of the SEM group taught new material, such as new exercises, they used a direct instruction teaching style, complete with a demonstration of the new exercises, teaching cues, and an explanation of the muscles activated, along with checks for understanding. In the next lesson, that content was provided as a review in the coaching plans. Research demonstrates that when students engage in peer teaching, they experience consistent benefits to their learning and retention (Duncan, 2005; Mazur, 1997). Unfortunately, post-testing was not done beyond the end of the course. For the DIM group, teachers would review the previous lesson materials using a direct instruction teaching style, then teach new exercises utilizing the same approach, complete with a demonstration of the latest exercises, teaching cues, muscles activated, and checks for understanding. The same content knowledge was provided to both groups using different teaching methods (i.e., peer teaching for SEM and direct instruction for DIM). The instructional model implemented did not determine the effectiveness of the content knowledge if the teachers were effective in teaching the same content to both groups.

The SEM in weight training outperformed the DIM in curl-ups and push-ups. Both groups were provided with exercises to improve upper-body and abdominal strength throughout the weight training courses. For the SEM group, teams would compete in periodical team competitions, such as a curl-up contest and push-up contest, to earn team points for the overall championship. The DIM group did not have any type of competition during the semester. The SEM competitions were included to enhance the affiliation component of the instructional model. It is possible that this increase in opportu-

nities to perform curl-ups prepared students to perform better on the post-test. Pritchard et al. (2015) found a significant increase in push-ups when investigating the SEM with body conditioning. The SEM high school participants showed significant improvement on the PACER test and push-up test, but did not exhibit a significant difference in curl-ups from the FITNESSGRAM (Meredith & Welk, 2010). The difference between the current study and Pritchard et al. (2015) is that the current study compared two instructional models. Pritchard et al. (2015) investigated the SEM body conditioning with no comparison to any instructional model. The current study did not utilize the PACER test because this activity consisted only of weight training.

The survey data provided insight into whether most of the SEM and DIM participants enjoyed the weight training courses. The SEM students appreciated being on a team to increase the affiliation aspect of the model. Similar results were reported by Wallhead et al. (2014), who observed that SEM students enjoyed the SEM more than those in the multi-activity model. Pritchard et al. (2015) reported that participants enjoyed the SEM in a high school fitness class. The high school participants enjoyed being on teams and competing against other teams (Pritchard et al., 2015). Mohr et al. (2012) reported that college-aged students were highly positive about aspects of the SEM when participating in physical activity courses. Student evaluations of the teaching approach were highly positive, and students rated their progress in acquiring skills highly (Mohr et al., 2012).

Earning points for the team was a driving factor for some SEM participants. These participants did not want to let their team down by not providing full effort in the weight training courses. Pritchard et al. (2015) found similar results with high school students when they participated in a body conditioning unit incorporating the SEM. The high school students reported that earning points for the team made them put forth more effort, especially on competition days.

A minority of SEM participants thought the point system was pointless and wanted to exercise on their own. An issue observed in teaching college-aged students in physical activity programs is the expectations college students have when participating in a physical activity course. Some students in this age group expect less instruc-

tion and desire greater autonomy. Some participants in this study expressed this view when responding to the survey. They were not expecting a structured class that required students to learn weight training techniques and course material.

Team awards and individual awards were given at the end of the semester. The SEM characteristics are unique and provide an overall learning experience unlike the DIM. The DIM was just as effective in improving skills such as strength, but there are no teams, team contests, or awards associated with this instructional model.

Conclusion

Both the SEM and DIM were effective in promoting student learning in weight training. The SEM participants enjoyed the aspects of the model, such as the affiliation, earning team points, and being motivated by their teammates. Most of the teachers in a PA program are graduate teaching assistants who have very little pedagogical knowledge, teaching content to university students. Choosing a structured instructional model, such as SEM, in PA courses can promote student learning, especially in weight training courses.

References

American College Health Association. (2024). *American College Health Association-National College Health Assessment III: Reference Group Executive Summary Spring 2024.* American College Health Association.

Bennett, G., & Hastie, P. A. (1997). A sport education curriculum model for a collegiate physical activity course. *Journal of Physical Education, Recreation, and Dance, 68*(1), 39–44. https://doi.org/10.1080/07303084.1997.10604876

Duncan, D. (2005). *Clickers in the classroom: How to enhance science teaching using classroom response systems.* Pearson/Addison-Wesley.

Earle, R. W. (2006). Weight training prescription. In *Essentials of Personal Training Symposium Workbook.* NSCA Certification Commission.

French, K. E., Werner, P. H., Rink, J., Taylor, K., & Hussey, K. (1996a). The effects of a 3-week unit of tactical, skill, or combined tactical and skill instruction on badminton performance of ninth-grade students. *Journal of Teaching in Physical Education, 15*, 418–438. https://doi.org/10.1123/jtpe.15.4.418

French, K. E., Werner, P. H., Taylor, K., Hussey, K., & Jones, J. (1996b). The effects of a 6-week unit of tactical, skill, or combined tactical and skill instruction on badminton performance of ninth-grade students. *Journal of Teaching in Physical Education, 15*, 439–463. https://doi.org/10.1123/jtpe.15.4.439

Harman, E. (2008). Biomechanics of resistance training. In T. R. Baechle & R. W. Earle (Eds.), *Essentials of strength training and conditioning* (3rd ed., pp. 65–91). Human Kinetics.

Hastie, P. A., Buchanan, A. M., Wadsworth, D. D., & Sluder, B. J. (2009). The impact of an obstacle course sport education season on students' aerobic fitness levels. *Research Quarterly for Exercise and Sport, 80*(4), 788–791.

Mazur, E. (1997). *Peer instruction: A user's manual.* Prentice Hall.

McGee, R., & Farrow, A. (1987). *Test questions for physical education activities.* Human Kinetics.

Meredith, M. D., & Welk, G. J. (Eds.). (2010). *FITNESSGRAM/ ACTIVITYGRAM test administration manual* (4th ed.). Human Kinetics.

Metzler, M., & Colquitt, G. (2021). *Instructional models for physical education* (4th ed.). Routledge.

Mohr, D. J., Sibley, B. A., & Townsend, J. S. (2012). Student perceptions of university physical activity instruction courses taught utilizing sport education. *The Physical Educator, 69*, 289–307.

Pritchard, T., Hansen, A., Grossman, H., Williams, M., & Loomis, S. (2019). Analysis of the sport education tactical model in badminton. *The Physical Educator, 76*(3), 832–847. https://doi.org/10.18666/TPE-2019-V76-I3-8800

Pritchard, T., Hansen, A., Scarboro, S., & Melnic, I. (2015). Effectiveness of the sport education fitness model on fitness levels, knowledge, and physical activity. *The Physical Educator, 72*(4), 577–600. https://doi.org/10.18666/TPE-2015-V72-I4-6568

Pritchard, T., Hawkins, A., Wiegand, R., & Metzler, J. (2008). Effects of two instructional approaches on skill development, knowledge, and game performance. *Measurement in Physical Education and Exercise Science, 12*, 219–236. https://doi.org/10.1080/10913670802349774

Safrit, M., & Wood, T. (1995). *Introduction to measurement in physical education and exercise science.* Mosby.

Siedentop, D., Hastie, P., & van der Mars, H. (2019). *Complete guide to sport education* (3rd ed.). Human Kinetics.

Society of Health and Physical Educators. (2021). *Appropriate instructional practice guidelines for higher education physical activity programs.* https://issuu.com/shapeamerica/docs/shape_america_appropriate_instructional_practice_g?fr=sNjllNzQzODY5NjI

U.S. Department of Health and Human Services. (2018). *Physical activity guidelines for Americans* (2nd ed.). U.S. Department of Health and Human Services.

Wallhead, T. L., Garn, A. C., & Vardini, C. (2014). Effect of sport education program on motivation in physical education and leisure-time physical activity. *Research Quarterly for Exercise and Sport, 85*, 478–487. https://doi.org/10.1080/02701367.2014.961051

Ward, J. K., Hastie, P. A., Wadsworth, D. D., Foote, S., Brock, S. J., & Hollett, N. (2017). A sport education fitness season's impact on students' fitness levels, knowledge, and in-class physical activity. *Research Quarterly for Exercise and Sport, 88*(3), 346–351. https://doi.org/10.1080/02701367.2017.1321100

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NUTRITION

Exploring the Influence of Nutrition on Academic Success Among First-Year Bachelor of Physical Education Students at Bataan Peninsula State University-Orani Campus

Jay Mark Sinag

Abstract

The World Health Organization (WHO) emphasizes its importance in health and development. This qualitative-phenomenological study explores the role of nutrition in learning and education among first-year Bachelor of Physical Education (BPED) students at Bataan Peninsula State University, Orani Campus. The study involved 2 male and nine female BPED students aged 19-21. Four research questions guided the study: the importance of nutritional food in school canteens, nutrition's effect on students' personal, social, and academic aspects, experiences of nutritional deficiency during class, and the impact of nutrition knowledge on academic performance. Data analysis revealed three themes and eight sub-themes, highlighting students' experiences with nutritional deficiency, the impact of nutrition on learning and academic performance, and their responses to these challenges. Most students experienced a lack of nutrition, affecting their learning and academic performance. Additionally, the research uncovered how nutritional food influenced their educational outcomes and overall well-being. First-year students often lacked awareness of the importance of

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nutritious food and its impact on learning and academic performance, revealing a need for improved nutrition education. Overall, the study highlights the crucial role of proper nutrition in the educational context, underscoring the need for enhanced nutrition awareness and practices among students to foster their academic and personal development.

Introduction

Nutrition is fundamental to human existence (WHO, 2024). An individual's nutrition is determined by their daily dietary intake. If the consumed list comprises a balanced diet requisite for the body, then the individual may maintain a normal nutritional status. Nutritional status denotes an individual's comprehensive state arising from the consumption, absorption, and metabolism of food (StatPearls, 2024).

According to the World Health Organization (WHO), nutrition is an important aspect of health and development. Better nutrition is associated with improved infant, child, and maternal health, stronger immune systems, safer pregnancy and childbirth, a lower risk of non-communicable diseases (such as diabetes and cardiovascular disease), and a longer life. In addition, Wedu et al. (2018) said nutrition is the most basic thing in human life. Someone's nutrition is derived from the daily menu they consume. If the list consumed contains a balanced diet that the body needs, then the person can have a normal nutritional status. Nutritional status refers to a person's overall condition resulting from the intake, absorption, and metabolism of food.

In the Philippines, the latest national nutrition survey reveals that the total prevalence of underweight Filipino preschoolers is 33%. About 8% of school children are moderately and severely underweight, while 20% are mildly underweight. Even mild undernutrition affects learning. The survey also revealed that iron deficiency anemia (IDA) is the most widespread nutritional deficiency in the Philippines, affecting approximately 20 million Filipinos, including 30.8% of schoolchildren and 26.7% of preschoolers. (Solon et al., 2013). Moreover, the WHO (1946) defined health as a state of complete physical, mental, and social well-being, not just the absence of disease and infirmity. An adequate diet, which is the central tendency and master of all qualities, can regulate the body's immune

system to achieve "freedom from diseases" and maintain normal bodily functions.

However, over time, nutrition theory has changed. Scientists and philosophers have long regarded nutrition as one of life's essential elements. Therefore, it should come as no surprise that nutrition was an essential part of every global medical science concept. The time of Aristotle and Galen marked the development of the earliest theories on nutrition. They recognized nutrition as a crucial component of overall wellbeing, as well as illness, performance, and recovery. Every portion of the body is thought to be powered by the blood that flows to it. The nutrients absorbed from the food consumed form the blood. The ancient Chinese medicine text Huangdi Neijing (Yellow Emperor's Classic of Medicine), considered the Chinese equivalent of the Hippocratic Corpus, describes notions similar to those found in ancient European theories of nutrition and human physiology. In accordance with classical literature from Greece, Rome, and China, a balanced diet should consist of a majority of cereal grains, legumes, fruits, honey, fish, and milk. Meat, booze, and sweets should all be enjoyed in proportion. The ability of those ancient physicians and philosophers to forecast a general dietary plan without having a thorough understanding of how the human body functions is fascinating.

Statement of Purpose

The general purpose of the study is: How do the nutrients affect the learning and education of first-year BPED students in the Bataan Peninsula State University Orani Campus during academic Year 2022-2023? Specifically, it sought answers to the following questions: 1. What is the importance of nutritional food that is served in the school canteen?; 2. How does nutrition affect the first-year BPED students in terms of their holistic development, including personal, social, and academic aspects? What are the experiences of first-year BPED students in the lack of nutrition during class hours?; 4. How does an infographic help the students recognize the different nutritional information?

Methodology

Research Design

This descriptive phenomenological study aims to identify the role of nutrition in the education of first-year Bachelor of Physical Education students at Bataan Peninsula State University, Orani Campus. The study involved 11 respondents: two male and nine female first-year students aged 19-21. The study employed a qualitative approach to gain an understanding of concepts, opinions, and experiences related to nutrition and education (Pritha Bhandari, 2020). Phenomenology describes lived experiences and studies essences, seeking to uncover meanings in everyday existence to fulfill human nature.

In this study, personal experience was the starting point. After gathering textual sources, researchers interpreted the data and identified meaning units through a research plan or proposal. This process balanced explicit methodological statements with openness to explore unforeseen directions, techniques, procedures, and sources. The ultimate aim was to become more fully who we are by understanding the essence of the phenomena governing the instances of nutrition's impact on education.

Environment

This study involved first-year Bachelor of Physical Education students from Bataan Peninsula State University, Orani Campus. It focused on their experiences with the importance of nutrition in food for their learning capabilities. The research aimed to explore how proper nutrition impacts their academic performance and overall educational experience, highlighting the critical role of a balanced diet in enhancing cognitive function and academic success among these students.

Participants

Participants were selected using randomized sampling, a probability sampling method where the researcher randomly selects a subset of participants from a population, ensuring each person has an equal chance of being chosen. Data was gathered from as many of the randomly selected individuals as possible who agreed to par-

ticipate in the surveys. The researcher predetermined the criteria for the participants and was already familiar with them. As all survey respondents fit a specific profile, purposive sampling was employed to select a targeted subset of individuals.

The participants were first-year bachelor of Physical Education students from Bataan Peninsula State University Orani Campus, aged 18-20 years. The gender distribution was unequal, with six female and four male participants. This method ensured a representative sample to explore the role of nutrition in their learning capabilities and overall educational experiences.

Data-Gathering Procedure

To begin the interview and survey process, the researchers first presented the respondents with a letter requesting their permission to conduct the interview. The researchers conducted interviews on weekdays and personally distributed the questionnaires at the school or in a location where the interviewers and interviewees felt comfortable. This process was completed within two weeks. The interviews were recorded through note-taking and audio-recording. The researchers thoroughly explained the research intent to the respondents and established rapport to elicit accurate responses to the interviews and questionnaires. For data gathering purposes, the questionnaire was specifically prepared according to the problem raised in the study. The responses were treated as primary data and formed the basis for the study's conclusions and recommendations. In constructing the survey questionnaire, the researchers consulted books, theories, theses, and other related materials. An initial letter was sent to the respondents to obtain the necessary information for the study. The researchers explained the study's objectives and purpose, which was to appraise. Favorable action was taken in response to the letter. After preparing and assessing the questions, the researchers conducted the interviews to identify which questions were reliable and which were not.

Data Analysis

Colaizzi's (1978) seven-step approach guided the researchers in collecting data. The technique that the researchers used was to determine the respondents' opinions and experiences, which can be gath-

ered through face-to-face interviews and focus groups. Colaizzi's step-by-step approach was used in the data analysis.

Step One: Ask Questions

The researchers provided 10 questions to seek answers about the role of nutrition towards learning and education of bachelor of Physical Education, first-year students at Bataan Peninsula State University, Orani Campus.

Step Two: Data Collection

The researchers asked the respondents about their academic achievements and their experiences at school, as well as their personal information (e.g., name, sex, age, and grade level). The researchers gave them a paper to fill out the questions

Step Three: Conduct an Interview

Researchers ask the 10 respondents from the first year about their knowledge and experience with the role of nutrition to their academics.

Step Four: Collecting of Respondents' Answers

The researcher collected all the data they got from the interview.

Step Five: Summarizing the Data

The researchers collect and organize all of the information they have gathered: personal information and responses to the questions.

Step Six: From the Data Gathered

The researchers were able to draw the conclusion and result of the nutrition towards learning and education of bachelor of Physical Education, first-year students at Bataan Peninsula State University, Orani Campus.

Step Seven: Interpreting the Results

The researchers identify the issue and the need for improvement in the school health nutrition services.

This step-by-step approach will help researchers gradually understand the importance of school health services to all students, particularly student-athletes who require these services. A focus group was used in this study, where the researchers and students formed a circle to share their opinions and experiences, and an interview was conducted to answer the questions.

Research Instrument

Using a self-made questionnaire, the researchers conducted interviews with participants over the course of a week, distributing the questionnaires in person at the school or at another comfortable location that was convenient for both the interviewers and the interviewees. The researchers utilized smartphones to record audio and take notes during the sessions. To obtain suitable answers, the researchers established a rapport with the respondents and provided a thorough explanation of the study's goals. The questionnaire was specifically created to address the issues identified by the study. The conclusions and recommendations were derived from the questionnaire responses, which were treated as primary data.

Additionally, the researchers consulted relevant books, theses, theories, and other reading materials to inform the creation of the survey questionnaire.

Construction and Validation of the Instrument

The content validation of the questionnaire aimed to determine whether the problems under study were answerable based on the respondents' knowledge or experience. The validity of the questionnaire is defined as its ability to measure and describe what it is intended to identify, based on asking and receiving answers to questions that collectively define the attribute, state, or quality the researchers aim to identify (Glenn et al. 2007). A formal letter of request was sent to the Office of the Campus Director, and the researchers personally administered the instruments to ensure a high retrieval rate from the respondents.

After the questionnaire was answered and collected from the respondents, the data were carefully tabulated, analyzed, interpreted, and presented to fulfill the purpose of this investigation.

Ethical Considerations

The researcher obtained prior consent from the respondents for participation in the research. Permission was also obtained from the Program Head of the Bachelor of Physical Education and the Campus Director of Bataan Peninsula State University, Orani Campus, and forwarded to the participants. All participants were informed about the study's details. Participation was voluntary, and participants

could withdraw from the study without any consequences. The anonymity of participants was guaranteed. To ensure confidentiality, participants were provided with an encrypted code and were not identified by name.

Results

The goal of this phenomenological study was to understand the role of nutrition in the learning capabilities of first-year bachelor of Physical Education students at Bataan Peninsula State University, Orani Campus. The following research topics motivated this study: (1) What is the importance of nutritional food served in the school canteen? (2) How does nutrition affect the first-year BPED students in personal, social, and academic aspects? (3) What are the experiences of first-year BPED students lacking nutrition during class hours? (4) What are the implications of lacking nutritional knowledge on students' academic performance?

In this study investigating the experiences of BPED-1st year students at Bataan Peninsula State University, Orani Campus, on academic performance, three themes and eight (8) sub-themes were revealed through data analysis. The themes highlighted students' experiences with a lack of nutrition, the impact of nutritional food on their learning and academic performance, and their responses to these challenges.

Importance of Nutritional Food Served in School Canteens

On the theme of nutritional food, most participants emphasized the importance of having a school canteen. As first-year students, they are particularly busy with their academics and do not have the time to prepare their own meals. Participants described their experiences with the food in the school canteen.

The following outlines the various experiences and reasons why the school canteen is important for providing food to students.

Theme 1. Significance of Serving Food to the Students

Each respondent has a unique perspective on why serving food in the school canteen is important, especially during this transitional period following several years of blended or online learning due to the pandemic. Most of them say it's important because they are busy

with their academics, so having food served in the canteen is very convenient. It provides them with more energy throughout the day and helps them focus better in class, especially when they have early classes.

Having a good meal can enhance students' learning capabilities. The sub-theme is "Importance of Nutritional Food," which discusses explicitly how the quality of nutritional food affects students' learning capabilities.

Sub-Theme 1. Importance of Nutritional Food

This implies that a student's ability to learn and concentrate in class is enhanced by consuming nutritious food. According to other research, improving the quality of learners' meals leads to better performance in various tasks, potentially higher test scores, and increased attendance. As the participants revealed that:

> The food provided by the school canteen is important for the first years who are in the apartment or dormitory because we are so busy with activities that we don't have enough time to prepare for our meals. So instead we go in the school canteen to buy healthy foods. (Participant J)

> The nutrients is very important to our body because it produce energy for our daily routine on campus. (Participant B)

> The importance of nutritional food provided by our school canteen is that it helps us maintain healthier diet. (Participant I)

According to the participants, maintaining regular eating habits and proper nutrition enables them to maximize their learning potential in the environment. Living among strangers in a dorm, managing a new class schedule, navigating a new social scene, and functioning without a parental safety net are all new experiences for them as college freshmen. Eating well helps them concentrate in class. Based on the survey, the food served in the school canteen is important to them, especially in relation to their academic performance.

Effects of Nutrition on the Students in Terms of Their Holistic

On the theme of nutritional impact, physical, emotional, social, and academic performance received the highest count of participants. One hundred percent of the participants reported improvements in their physical health, emotional well-being, social interactions, and academic performance through the consumption of nutritious food.

Participants described their experiences based on how their nutrition influenced their education and learning capabilities. The following illustrates the thematic interconnection of the students' experiences with the concepts, meanings, and statements expressed by the participants.

Theme 2: Nutritional Impacts

Nutritional impacts refer to the various aspects of a student's perspective that reflect the effects of nutrition on their physical, emotional, social, and academic performance.

The nutrition of students can significantly impact their educational outcomes and learning capabilities. The sub-themes are "Impacts on Physical Health," "Impacts on Emotional Health," "Impacts on Social Health," and "Impacts on Academic Performance." These sub-themes specifically discuss the holistic capabilities of students through nutritional consumption.

Sub-Theme 2.1. Impacts on Physical Health

This indicates that a student's ability to learn and succeed in school is affected by physical factors related to nutrition. As the participants revealed that:

> Nutritional food helps me to strengthen my physical body and makes me strong and gives me power for everyday chores. (Participant A)

> If I eat nutritional food, it is good for me and gives me a great impact that makes me physically fit. (Participant J)

The term "Impacts on Physical Health" refers to the influence of nutritional food intake on students. The impact of nutrition on their physical health leads to improvements in their education and

learning capabilities. It enhances their activity level, vitality, and participation in school activities.

Sub-Theme 2.2: Impacts on Emotions

This means that emotional aspects are influenced by nutritional food consumption, which affects the education and learning capabilities of a student. As the participants voiced that:

> In terms of emotions, for example, when I drink coffee, I get in a good mood and my spirit becomes active. (Participant E)

> Because if I do gym and eat nutritious food that's where I get happiness and joy. (Participant H)

> Nutrition improves my mood and improves my ability to focus. (Participant I)

The term "Impacts on Emotions" describes how students' eating patterns affect their emotional state. The effect of nutrition on students' emotions has a positive influence on their education and learning capacity, enhancing their motivation, attention, productivity, and overall happiness in participating in school activities.

Sub-Theme 2.3. Impacts on Social

This means that social aspects of the students are influenced by nutritional food consumption, which impacts the education and learning capabilities of a student. The participants articulate that:

> When we get together with our classmates, it's like we're eating together and we're noisy because we have fun talking and it's really nice that kind of bounding. (Participant H)

> Nutrition helps with my mood and gives me the energy to participate in any group activities that will be conducted in school. By this, I will most likely enjoy certain activities. (Participant I)

> Nutrition affects me socially when I eat healthy foods, I become approachable to others, I'm always in the mood to

> make conversations, but now it's rare because I'm doing so much that I can't eat properly, so I only buy at the canteen. (Participant J)

The "Impacts on Social" refers to the impact of the students' food choices on their social interactions. The effect of nutrition on students' emotions has a positive impact on their education and learning capacity, making them more approachable, bonding with others, and cooperating with them, which leads to enjoyment in performing out-of-school activities.

Sub-theme 2.4. Impacts on Academic

This indicates that a student's ability to learn and develop academically is impacted by the nutritional quality of the food they consume. The participants shared their experience:

> When what I eat every day is nutritious, my performance is better, like example dance, acting, drama, the creativity of my brain is better. (Participant B)

> Nutrition is important, especially academically, especially when preparing for the exam, midterm, finals, we really need to eat nutritious food to better retain what is being reviewed. (Participant C)

> Nutrition gives me the energy to think properly and process lessons effectively. (Participant I)

The term "Impact on Academic Performance" refers to the effects of nutritional food intake on students. The impact of nutrition on their academic performance leads to improvements in their education and learning capabilities. It helps students focus on their lessons, process information effectively, be creative, think critically about the material, and perform well academically.

Providing Pertinent Nutritional Food Information

In today's world, people are increasingly seeking information that helps create effective and relevant knowledge. This analysis highlights the importance of relevant information, particularly regarding nutritional food.

Food is essential for Filipinos, who are renowned for preparing delicious meals and recognizing the importance of both physical and mental nourishment. When considering how food affects students, opinions vary widely. Some students have limited knowledge about nutritional foods, while others acknowledge their ignorance.

This analysis will emphasize the importance of food safety and healthy eating, highlighting its crucial role in students' overall well-being and academic performance. By focusing on the impact of nutrition, we aim to highlight its crucial role in enhancing students' learning capabilities and overall health.

Theme 3. Advantages of Information and Ideas About Nutritional Food

Acknowledging processed meals helps others take responsibility for their dietary choices and optimize their nutrition. Awareness and timely information about healthy foods offer Bataan Peninsula State University, Orani Campus students new knowledge.

The study reveals how participants' understanding of healthy foods and their eating habits influence their lives. The benefits of knowing about proper nutritional food include: (1) improved logical and effective thinking, (2) increased activity, especially intellectually, (3) new awareness, (4) enhanced information validity, and (5) greater curiosity.

On the other hand, disadvantages arise from a lack of nutrition knowledge, including (1) insufficient understanding of essential nourishment, (2) unawareness of potential constraints, and (3) negative impacts on academic performance. The study clearly explains and presents data to illustrate the importance of nutritious food, providing a comprehensive understanding through the sub-theme.

Sub-Theme 3.1 The Results of Knowing the Nutritional Foods

We reiterate the advantages of understanding nutritional food, but what is the actual result for students? Was it beneficial? What impact did it have?

According to participants, knowing about food helped them engage more in class and acquire knowledge. Healthy food made them more active in activities, boosting their ability and confidence in learning. This benefits them by enhancing academic achievement,

expanding their knowledge-sharing capacity, and helping them avoid the negative effects of poor nutrition.

The survey revealed that awareness of nutritional food led students to better understand how to care for themselves and the positive effects of proper nutrition on their well-being. As the participants revealed that:

> If you have an idea or have knowledge, you will not have a hard time searching or doing research. And you can make your body stronger by eating. First of all, when you eat, you don't need to search because you will have a plan to be physically fit.(Participant E)

> We will be more aware so that the body can be strong and disease can be avoided. (Participant D)

> It's easy to say because the natural like vegetables that don't need to be cooked or used with deep fried oil are especially healthy foods compared to junk foods and greeny vegetables. The advantage of having it is because you know to avoid and attack our body if we also know our needs, we don't have to think about whether or not a stone is nutritious because it's just a thought that we know that the nutrients we need are there. (Participant C)

> Vulnerability to disease will be lessen. (Participant G)

The perspective on the direct consequences or belief in being aware of healthy food varied among them. However, they agreed that understanding the significance of food is crucial for preventing illness and avoiding potential costs.

One goal of consuming healthy food is to provide the body with adequate nutrition. This knowledge is especially helpful to learners. Eating nutritious food is important not only for maintaining health and well-being but also for generating new knowledge.

Sub-Theme 3.2 The Media's Dictate

As a result of modern technology and the widespread adoption of the digital era, it has become a bridge for BPSU–Orani Campus students to share knowledge about nutritional food.

Over time, the information that helps students—and indeed, almost everyone—understand the importance of healthy food has become more extensive. This illustrates various ways participants used digital tools to learn more about nutrition. According to the participants:

> While watching the videos, I was looking for advice like that, but I'm familiar with the infographic. It helps, of course, it indicates how important the information is. (Participant G)

> Internet, that's where I know the importance of food, whether it's junk food or whether it can help our body to improve, yes, I'm familiar with the child before with nutritional food 50/50. If you don't do research, you won't know anything, but if you do research, it's like when you make infographics, it's not just your brain that's used. (Participant J)

> With the help of social media posts, YouTube/ Tiktok videos, mainly the internet, students will have the access to browse about food nutrition. With those, they can be able to understand and learn more about the nutrition they get in the food they eat. (Participant I)

Students were initially unfamiliar with the significance of consuming nutritious food through seminars or other programs. However, modern media—such as social media, infographics, YouTube, and other platforms—helped participants understand and decide what foods to include, avoid, or reduce in their diets.

Sub-Theme 3.3 Affect the Thinking

Knowing about healthy foods causes (1) your beliefs to change, (2) your knowledge to expand, and (3) you to become more cautious and selective about the food that may harm your health.

This final subtheme will illustrate the understanding and importance of nutritional food. According to the participants:

> I searched on Google about unhealthy and healthy, like fat and greasy foods that are unhealthy and fruits like bananas that have protein. (Participant J)

> Read books to find out the information that will help our body. (Participant F)

> You know, take care of yourself, [choose] the food you eat so it won't make you sick. (Participant A)

This led to a more careful approach for BPSU-Orani Campus students. Since they need to understand their dietary choices, they should be more knowledgeable about healthy foods. This has given them a greater appreciation for health and provided insights that can enhance their studies.

The theme and its connections are accurate, based on participants' responses. All information is relevant and clear. Understanding proper nutrition is crucial for personal growth and becoming a knowledgeable individual with adaptable ideas.

The study highlights the importance of nutrition and its impact on academic, social, and personal contexts. Awareness of nutritional foods is essential, as many students frequently eat out without knowing if the food is healthy or beneficial. As digitalization advances, recognizing important nutritional information is vital. This study underscores the significance of diverse and relevant opinions from participants.

Discussion

The purpose of this phenomenological study was to explore the impact of nutrition on the learning abilities of first-year Bachelor of Physical Education students at Bataan Peninsula State University, Orani Campus. It examined the importance of nutritious food served in the school canteen, the effects of nutrition on students' personal, social, and academic aspects, and their experiences with nutritional deficiencies during class hours. The study also examined the impact of a lack of nutritional knowledge on academic performance.

Nutrition involves studying how food and beverages affect the body, focusing on essential nutrients like carbohydrates, fats, fiber,

minerals, proteins, vitamins, and water. It includes understanding physiological and biochemical processes, how food provides energy, and its role in forming body tissues. Nutrition is fundamental to human survival, health, and development throughout life.

Importance of Nutritional Food Served in School Canteens

Most respondents emphasize the importance of having a canteen on campus because, as students, especially first-year students, they are often preoccupied with academics and do not have sufficient time to prepare their own food. This study determined and analyzed the significance of nutritional food for every learner.

Theme 1. Significance of Serving Food to the Students

Serving food in the school canteen is crucial, especially after years of blended or online learning due to the pandemic. Nutritious meals significantly impact students' learning abilities. Nutrition education is most effective when it focuses on behavior and action, not just knowledge, and integrates relevant theory, research, and practice. It encourages healthy eating among children. According to the National Institute of Medicine (2005), schools are ideal for teaching healthy diets since children spend much of their time there. Trained instructors can improve students' behavior and knowledge about nutrition, leading to better health outcomes.

Sub-Theme 1. Importance of Nutritional Food

According to the survey, the food served in the school canteen is crucial for students, particularly for their academic abilities. Living in a boarding house, navigating a new social scene, and managing without parental support are challenges for college students. Maintaining good eating habits and nutritious food helps them maximize their school experience and improves class concentration. Research shows that better meal quality leads to enhanced performance, higher test scores, and increased attendance.

Nutrition's role in addressing societal, environmental, and economic issues is gaining recognition. Adequate nutrition helps reduce food insecurity through purposeful agricultural practices. As Ohlhorst et al. (2013) noted, the importance of nutrition in meeting

the global demand for a safe, sustainable, and affordable food supply is becoming more appreciated.

Effects of Nutrition on the Students in Terms of Their Holistic

Theme 2. Nutritional Impacts

A healthy, balanced diet is crucial for overall health and well-being. Nutritional impacts affect students' physical, emotional, social, and academic performance. Consuming nutritious food enhances students' activity levels, vitality, and participation in school activities, thereby boosting their motivation, attention, productivity, and overall happiness. It improves approachability, social bonds, and cooperation, leading to enjoyment in both academic and extracurricular activities. Focusing on lessons, effective processing, and enhancing creativity and critical thinking contribute to increased educational and learning capabilities.

Dodsworth (2010) in "Student Nutrition and Academic Achievement" emphasizes that proper nutrition is essential for both physical and mental growth. Healthy diets aligned with the U.S. Food Guide Pyramid have been shown to improve problem-solving skills, test scores, and school attendance, supporting our findings that a balanced diet positively impacts physical health, emotions, social skills, and academic performance.

Sub-Theme 2.1. Impacts on Physical

Eating well reduces the risk of physical health problems and is crucial for students' academic success. The term "Impact on Physical" refers to how nutritional food intake influences students' physical health and learning capabilities. Proper nutrition enhances activity levels, vitality, and participation in school activities.

Furthermore, consuming low-nutrition food can weaken the immune system, increasing the risk of illness. An article from "The Nutrition Source" by Harvard School of Public Health cites poor diet as a factor in reduced immunity, noting that malnutrition impairs immune cell production and activity. This supports our findings that many participants choose less nutritious meals due to limited time and resources, particularly those living in dorms, leading to lower energy levels in class.

Sub-Theme 2.2. Impacts on Emotions

Nutritional food consumption affects students' emotional states and impacts their education and learning capabilities. The term "Impact in Emotions" reflects how eating patterns influence emotions, enhancing desire, attention, productivity, and happiness in school activities.

In the Pollitt and Lewis (2010) study, good nutrition positively affects social development, including friendliness, verbalization, social play, and exploratory behavior. This sup- ports our findings that nutritional intake benefits social behavior. Participants reported that having sufficient meals improves their mood and interactions with classmates, while insufficient food negatively affects their social engagement.

Sub-Theme 2.3. Impacts on Social

Nutritional food consumption affects students' social aspects, impacting their education and learning capabilities. The "Impacts on Social" term highlights how food choices influence social interactions. Proper nutrition enhances students' social behavior, making them more approachable and cooperative, which improves their enjoyment of extracurricular activities.

According to the University of Pennsylvania (2010) study, good nutrition positively affects social development, including friendliness, verbalization, social play, and exploratory behavior. This supports our findings that nutritional intake benefits social behavior. Participants reported that having sufficient meals improves their mood and interactions with classmates, while insufficient food negatively affects their social engagement.

Sub-Theme 2.4. Impacts on Academic

The nutritional quality of food has a significant effect on students' academic development. The term "Impact in Physical" refers to how nutritional intake affects students' academic performance and learning capabilities. Good nutrition enhances focus, learning, processing, creativity, critical thinking, and overall academic success.

According to Dodsworth (2010) in "Student Nutrition and Academic Achievement," issues like chronic hunger, iron deficiency, skipping breakfast, and general nutritional deficiencies are linked to poor academic outcomes. Malnutrition contributes to cognitive

underdevelopment, low energy, and concentration problems, correlating with increased school absences, hyperactivity, aggression, anxiety, and poor test scores. This study aligns with Dodsworth's findings, emphasizing that proper nutrition is crucial for academic improvement. Students who consume nutritious food are generally more engaged and motivated, leading to better academic performance compared to those who eat unhealthy food. Therefore, ensuring adequate nutrition is crucial for improving students' educational outcomes.

Providing Pertinent Nutritional Food Information

This study examines the effects of inadequate nutrition on first-year Bachelor of Physical Education students at Bataan Peninsula State University, Orani Campus, focusing on their academic performance, mental and emotional well-being, social interactions, and overall holistic health.

The research highlights that while Filipinos have a broad knowledge of food, many are unaware of what constitutes nutritious food.

According to the World Health Organization (WHO), nutrition is crucial for health and development. Proper nutrition supports cognitive function and overall growth, much like a plant needs sunlight to thrive. Without essential nutrients, learning and growth are compromised.

The study findings show diverse perspectives among students regarding nutritional food, with some lacking knowledge. We emphasize the importance of food safety and healthy eating, reflecting the study's significance for improving students' well-being and academic success.

Theme 3. Advantages of Information and ideas about nutritional food

The importance of understanding and consuming nutritious food is highlighted in this analysis. Participants had varied perspectives; some believed that nutritious food focused mainly on vegetables, which could potentially lead to misconceptions. However, nutritional value also includes fruits, and meeting a student's average body needs is crucial for overall health. Knowledge about healthy food helps individuals avoid less beneficial options and select foods that support academic, social, and personal success.

Benefits of knowing appropriate nutritional information include improved logical thinking, increased physical activity levels, enhanced awareness, and greater validity of information. Effective nutrition education enables individuals to make informed food choices, thereby positively contributing to both academic performance and personal well-being. It promotes intellectual activity, logical reasoning, and curiosity.

Despite these advantages, a lack of nutritional knowledge can result in an incomplete understanding of nutrition and its limitations, potentially impacting academic performance. Awareness of the core of nutrition and potential dietary constraints is essential to fully benefit from healthy eating practices. Proper nutritional knowledge enables students to select foods that enhance their overall performance and well-being.

Sub-Theme 3.1 The Results of Knowing the Nutritional Foods

Understanding healthy foods is beneficial for both health and academic performance. Knowledge about nutrition helps individuals avoid unbeneficial foods and choose those that support educational, social, and personal success.

Our study found that students who understand nutritional food make better food choices, leading to increased engagement and confidence in class. They are more active in activities and perform better academically.

The research emphasizes that awareness of nutritional foods has a positive impact on education and learning. Students who consume nutritious foods tend to exhibit improved motivation, attention, productivity, and overall well-being in school. This awareness also enhances social interactions, making students more approachable and cooperative, which boosts their enjoyment of school and extracurricular activities.

Nutrition has a positive influence on students' physical health, activity levels, and participation in school activities, thereby enhancing their overall educational experience. Proper nutrition leads to better focus, creativity, and critical thinking, which are essential for academic excellence. Understanding the effects of nutrition on one's health and learning capabilities highlights the importance of a well-balanced diet.

Sub-Theme 3.2 The Media's Dictate

According to Health Planet, Health Youth (HPHY), the Self-Determination Theory (SDT) highlights the importance of motivation quality, ranging from intrinsic to extrinsic. This study employed both qualitative and quantitative methods to assess the average use of nutritional food, incorporating digital tools to boost motivation for healthier food choices and reduce food waste. Social media plays a key role in this, increasing awareness of nutritional information.

We included the Media's Dictate to reflect the current technological landscape, where social media helps participants learn about and choose beneficial foods. Our research shows that, despite initial unawareness among first-year students, the evolution of technology has enabled them to search for and understand nutritional information better. Participants appreciate how these resources help them make healthier food choices, leading to improved knowledge and faster cognitive processing.

Sub-Theme 3.3 Affect the Thinking

The researchers in this study have explored the benefits of understanding nutritional food, its outcomes, and how it influences the participants' thinking. The increased awareness about nutritional food has led to more enlightened thinking among participants, who now understand its importance more deeply. As college students, they initially found it challenging to engage in discussions and academic activities due to poor nutrition. However, their improved understanding has made them more aware and concerned about their dietary choices.

Karen Camelo and Marta Elliott's study, "Food Insecurity and Academic Achievement Among College Students at a Public University," investigated the correlation between food insecurity and GPA. They examined how food insecurity impacts academic performance and whether it mediates the relationship between student characteristics and GPA. This study connects to our research on the role of nutrition in the learning and education of first-year Bachelor of Physical Education students at Bataan Peninsula State University, Orani Campus. The well-informed participants in our study showed improved academic performance due to better nutritional knowledge.

Our findings reveal that understanding nutrition has helped participants reflect on and address their previous poor eating habits. This reflection has enabled them to make more informed food choices and understand the limitations of their dietary options. The participants have gained a newfound appreciation for health, which supports their academic and personal growth.

The proposed research highlights the importance of applying nutritional knowledge and its impact on academic, social, and personal contexts. In today's digital age, where many students buy food without knowing its quality, understanding nutrition is crucial. Our study emphasizes the significance of nutritional education and its holistic impact on students. The rapid evolution of technology makes it increasingly difficult to discern the importance of nutrition, underscoring the need for continued awareness and informed choices regarding healthy eating.

Rationale

This study explores the impact of proper nutrition on the holistic development and academic performance of first-year Bachelor of Physical Education students at Bataan Peninsula State University, Orani Campus. It evaluates whether the school canteen provides adequate nutrition and its effects on students' physical, emotional, and mental health. Utilizing a qualitative approach, the research examines concepts, opinions, and experiences related to nutrition. Randomized sampling was used to select a representative subset of participants from the student population. The aim is to understand how nutrition influences students' overall well-being and academic success.

Objectives

To fully deliver the nutritional value toward the education and learning capabilities of the students in the first-year BPED in the BPSU-Orani campus.

- Promote nutritional food purchase provided by the school canteen
- Encourage students to choose nutritious food intake over non-nutritious food intake.

- Influence students to appreciate and utilize informative materials like an infographic to gain information about nutrition.

Implementation

Researchers' plans were evaluated subjectively, and we provided effective strategies for implementation. At Bataan Peninsula State University, Orani Campus, we conducted orientation programs and distributed brochures on nutrition. The intervention program aims to test and enhance students' knowledge and abilities, offering new ways to assess their performance. This approach may lead to more efficient and successful methods than current practices:

Conduct: Train all Physical Education leaders at the college level on using the intervention program to assess first-year physical education students.

Execute: Follow the program's instructions precisely, from start to finish, during the orientation or training for BPED first-year students on nutrition.

Monitor: Continuously check the program's progress to ensure it is effective and valuable.

Evaluation: Thoroughly assess the program to determine how well it meets its goals and identify areas for improvement.

Conclusion

Nutrition science examines nutrients in food, their utilization by the body, and their impact on health and disease, using principles from molecular biology, biochemistry, and genetics. This study examines the impact of nutritional food on the academic performance and learning competencies of first-year bachelor of Physical Education (BPED) students at Bataan Peninsula State University, Orani Campus.

The study explored several aspects, including the importance of nutritional food served in the school canteen, its holistic effects on students, and the relevance of nutritional information provided. Findings indicated that while students had varied opinions on nutrition, they shared a common goal of leveraging dietary benefits to enhance their academic, emotional, and social well-being.

Implementing a nutrition program, especially for a large audience, presents challenges. However, understanding healthy foods can significantly broaden students' perspectives and improve their academic abilities by promoting a healthy mind and body.

Strengths of this study include the ability to gauge participants' viewpoints, enhance awareness of nutritional impacts, and prepare researchers for future educational roles. However, limitations include communication difficulties with participants due to their busy schedules and the absence of grade comparisons, which may affect the study's results.

This research aims to highlight the importance of proper nutrition in enhancing academic performance and learning competencies. It advocates for schools, canteens, and future educators to recognize and implement effective nutritional programs. Additionally, it seeks to raise community awareness about nutrition and inspire further research in the field. The study's findings are valuable not only for current educational settings but also for future institutions, educators, learners, and researchers, enhancing the overall environment for student development and well-being.

References

Bell, J. W., & Luebbe, A. M. (2009). Student nutrition and academic achievement: The mediating role of mental health. *The College Student Journal, 43*(1), 169–181.

Camelo, K., & Elliott, M. (2019). Food insecurity and academic achievement among college students at a public university in the United States. *Journal of College Student Development, 60*(3), 307–318. https://doi.org/10.1353/csd.2019.0028

Good nutrition positively affects social development, research shows. (n.d.). *ScienceDaily.* https://www.sciencedaily.com/releases/2016/05/160510160320.htm

Institute of Medicine (IOM). (2005). *Dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids.* The National Academies Press.

Literature review on nutrition education. (n.d.). *Bartleby.* https://www.bartleby.com/essay/Literature-Review-On-Nutrition-Education-PC3EJQFJG

No food for thought: Food insecurity is related to poor mental health. (n.d.). *Journal of Health Psychology.* https://journals.sagepub.com/doi/abs/10.1177/1359105318783028?journalCode=hpqa

Ohlhorst, S. D., Russell, R., Bier, D., Klurfeld, D. M., Li, Z., Mein, J. R., Milner, J., Ross, A. C., Stover, P., & Konopka, E. (2013). Nutrition research to affect food and a healthy lifespan. *Advances in Nutrition, 4*(5), 579–584. https://doi.org/10.3945/an.113.004176

Pollitt, E., & Lewis, N. L. (2010). The effect of nutrition on cognitive and social development. In J. E. Z. R. K. Z. I. H. B. O. (Ed.), *Developmental neuroscience* (pp. 581–594). Blackwell Publishing.

Prescott, M. P., Burg, X., Metcalfe, J. J., Lipka, A. E., Herritt, C., & Cunningham-Sabo, L. (2019). Healthy planet, healthy youth: A food systems education and promotion intervention to improve adolescent diet quality and reduce food waste. *Nutrients, 11*(8), 1869. https://doi.org/10.3390/nu11081869

Rana, R. (n.d.). The impact of nutrition on physical and mental health. *Imprint.* https://uwimprint.ca/article/the-impact-of-nutrition-on-physical-and-mental-health/

Serhan, M., & Serhan, C. (2019). The impact of food service attributes on customer satisfaction in a rural university campus environment. *International Journal of Food Science.* https://www.hindawi.com/journals/ijfs/2019/2154548/

Singh, A., & Prashar, N. (2022). Differentials in the health nutrition and the academic performances in hostellers and dayscholar students of a university in Chandigarh. *Journal of Postgraduate Medicine, Education and Research, 56*(3), 121–125. https://doi.org/10.5005/jp-journals-10028-1592

Solon, F. S., Solon, J. A., Solon, M. S., Solon, E. T., Solon, H. A., Solon, N. A., & Sarol, J. N. (2013). Evaluation of the impact of the Philippine Food Fortification Act on iron deficiency anemia. *Food and Nutrition Bulletin, 34*(2), 224-230.

StatPearls. (2024). *Nutritional Assessment.* National Center for Biotechnology Information (NCBI) Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK580496/

Wilder Research. (2014). *Nutrition and students' academic performance.* https://www.wilder.org/sites/default/files/imports/Cargill_lit_review_1-14.pdf

World Health Organization. (2022). *Nutrition.* https://www.who.int/health-topics/nutrition#tab=tab_1

World Health Organization. (2024). *Nutrition*. https://www.who.int/health-topics/nutrition

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TEACHER EDUCATION

Supporting Pre-service Teachers to Motivate Students in Physical Education: A Pilot Study

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Abstract

To help pre-service PE teachers reflect on how to sustain students' motivation, this study employed a mixed-methods approach to evaluate a pilot training course titled "Learning How to Motivate." Its content covers 19 empowering motivational strategies that pre-service PE teachers can adapt to support students' motivation according to their needs and abilities. Four participants followed the training course during the third year of teacher training in complementary to their other theoretical and practical courses. They completed an online questionnaire before and after the training course, and participated in individual interviews. Results indicate that their beliefs about empowering and disempowering motivational strategies, as well as their intention to use some of them, tended to evolve after taking the course. Furthermore, participants appreciated the added value of the training and recognized its relevance as preparation for high school internships. Recommendations are offered to improve this training as a complement to teacher education. Funding: This work was supported by the

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Introduction

Both in-service and pre-service teachers face difficulties in sustaining students' motivation and addressing their lack of engagement (de Guise, 2024; Dias-Lacy et al., 2017; Ensign et al., 2018; Girard & Boulanger, 2024). Specifically, in the context of physical education (PE), teachers often encounter students showing little interest in physical activities and sports (Doolittle, 2016; Tannehill et al., 2015). This issue can be attributed, in part, to specific pedagogical strategies employed by teachers. For instance, some PE teachers use competitive situations to encourage students' engagement (Bernstein et al., 2013) even though it is widely recognized that such conditions may negatively impact students' motivation, particularly when they feel incompetent (Ryan & Deci, 2020). As another example, some teachers use external regulation to motivate students to engage in the proposed tasks (Reeve, 2006; 2009), but this approach has also been acknowledged as one that may undermine students' interest (Ryan & Deci, 2020).

In response to these challenges, professional development training for in-service PE teachers is effective, particularly in influencing their beliefs and the motivational climate they establish (Aelterman et al., 2014; Sum et al., 2022). However, similar efforts have not been extended to pre-service PE teachers. Despite undergoing a four-year training program, pre-service teachers still express concerns about how they will handle students' lack of motivation and engagement in PE classes (de Guise, 2024; Girard & Boulanger, 2024). Thus, the primary goal of the current study is to assess the impact of a training program designed to address these concerns regarding students' motivation.

Theoretical Framework

To understand effective ways to sustain students' motivation, the combined concepts of two motivational theories need to be taken into account: self-determination theory (SDT; Ryan & Deci, 2000) and achievement goal theory (AGT; Ames & Archer, 1988). The SDT

postulates that individuals of all ages and cultures are motivated to engage in an activity when it meets their three basic psychological needs: autonomy, competence, and relatedness. Indeed, when these needs are satisfied, individuals engage in autonomous forms of motivation, experience well-being, and persevere in the long term (Ryan & Deci, 2020). Situations that frustrate these needs, on the other hand, lead to controlled forms of motivation and early withdrawal from the task or activity (Ryan & Deci, 2020).

Specifically, autonomy refers to the need to make choices based on one's personal values and personality. Relatedness is the need to develop and maintain positive relationships with others. Competence refers to the need to feel successful and capable of meeting the expectations of the social environment. Regarding AGT, the need for competence involves mastering a task based on the individual's own capacity and self-referenced evaluation criteria (mastery), as opposed to comparing their ability with others or with normative standards (performance). In the context of PE, this means that, to motivate students, teachers must employ strategies that satisfy students' basic psychological needs and thereby create an empowering motivational climate (Desbiens et al., 2023; Girard, 2023; Mastagli et al., 2022; Milton et al., 2018). Strategies that frustrate students' needs, on the other hand, create a disempowering motivational climate and negatively impact motivation insofar as such strategies promote controlled forms of motivation (Casillo-Jiménez et al., 2022; Duda et al., 2018).

Beliefs About Motivational Strategies

The challenge both in-service and pre-service PE teachers face when motivating students may be attributed to their beliefs about motivational strategies (Bernstein et al., 2013), which are sometimes inaccurate (de Guise, 2024; Girard, 2024; Lemoyne et al., 2024). It is well-known, for example, that the concept of motivation is often misunderstood (Murayama, 2018). Moreover, an individual's beliefs about the efficacy, ease of implementation, and normalcy of an action determine their intention to engage in it (Aelterman et al., 2014; Ajzen et al., 2018). Accordingly, if teachers favour strategies that frustrate students' psychological needs, it may result in decreased engagement in their classes. Specifically, efficacy refers to the individual's attitudes towards the performance of a behavior. Simply put,

the individual may have more intention to perform the behavior if they anticipate positive rather than negative outcomes. Beliefs about ease of implementation or control refer to the extent to which an individual believes they have control over the behavior (perceived behavioral control). Put differently, the intention to engage depends on whether the individual considers it easy or difficult to perform, whether they believe they can or cannot perform it, and whether they can handle obstacles. Finally, normalcy, or normative beliefs, refers to how one perceives their social environment's approval of a behavior, which is described as the individual's subjective norm. Individuals are more likely to adopt a behavior they perceive as being more acceptable to peers (Ajzen et al., 2018). Typically, these beliefs are influenced by various background factors, including individual factors (e.g., personality or prior experience), social factors (e.g., education or age), and informational factors (e.g., knowledge or media exposure). These factors contribute to the diversity of beliefs among individuals and help explain variations in behaviors from one person to another.

In the context of PE, if a (pre-service) teacher holds mistaken beliefs about how to sustain students' motivation (i.e., holding favourable beliefs towards strategies that frustrate students' needs), they may have the intention to use motivational strategies that are not optimal to deal with students' disengagement with predictably negative results (Bernstein et al., 2013; Reeve, 2009). Reasons for this include their beliefs in potential positive outcomes, their perception of their ability to act in such a way, and the expectation of acceptance by their peers. A rather telling example is the use of rewards to motivate students (Murayama et al., 2017). According to SDT, the use of rewards frustrates the need for autonomy: the individual engages in the task to gain a prize rather than to engage for internal motives, such as understanding the usefulness and importance of the task or to achieve a personal goal (Ryan & Deci, 2020). The use of rewards, therefore, generates controlled forms of motivation; after the reward is withdrawn, the individual no longer sees a reason to engage in the task. Nevertheless, it appears that teachers believe this strategy may have a favorable impact on their students' engagement, perhaps because of PE teachers' experiences before entering the profession (de Guise et al., accepted, 2024; Desbiens et al., 2009), when the strategy's

direct positive results showed it to be effective and easy to implement. Moreover, they may be aware that the strategy is commonly used in the school to "control" students' behavior (Plante, 2005), contributing to a belief in its normalcy and efficacy for students' motivation. In sum, PE teachers may hold favorable beliefs towards strategies that may potentially discourage students' engagement in PE classes and their adoption of a healthy, active lifestyle outside of PE classes (Berstein et al., 2013; de Guise, 2024; Girard, 2024; Lemoyne, et al., 2024; Reeve, 2006; Torok et al., 2004). Because the determinant role of beliefs is related to the intention to use specific strategies and their persistence over time (Ajzen et al., 2018), the subject of (pre-service) teachers' beliefs should be addressed as early as possible in their professional development (e.g., initial teacher training).

Evolution of Beliefs During Initial Training

Although initial teacher training is a major step in PE teachers' professional development, its contribution to the evolution of pre-service teachers' beliefs is, for many reasons, insignificant (Adamakis & Zounhia, 2016; Berger & Girardet, 2016). Indeed, according to pre-service PE teachers, initial teacher training programs address motivational strategies mainly in theoretical courses, and the different concepts of motivational support are not adequately explained (Girard et al., 2023). Furthermore, there appears to be a lack of pedagogical continuity in the content of theoretical and practical courses (Desbiens et al., 2019), a fact underscored by pre-service PE teachers in a recent qualitative study (de Guise et al., 2024). From their point of view, university trainers have different understandings of how to sustain students' motivation, resulting in pre-service PE teachers feeling the need to choose between various practices, which may negatively affect the development of their beliefs.

Study Objectives

To address the anticipated challenges reported by pre-service PE teachers regarding sustaining students' motivation in PE (de Guise et al., 2024**),** a training course titled "Learning How to Motivate" has been designed for pre-service teachers (Girard & de Guise, 2024). The aim was to help them reflect on different ways of creating an empowering motivational climate during PE lessons to meet students' varied needs and abilities. The present study evaluates the pilot

training course based on three objectives: 1) examine pre-service PE teachers' evolution of beliefs (efficacy, ease-of-implementation and normalcy) regarding empowering and disempowering motivational strategies as well as their perceived competence in sustaining student motivation (in primary and high school) subsequent to taking the course; 2) describe pre-service PE teachers' appreciation of the training and the knowledge acquired together with their intention to use the empowering motivational strategies learned; and 3) identify ways to improve training from their perspective.

Methodology and Methods

This study employs an exploratory descriptive design and a mixed-methods approach to achieve its three objectives, and is part of a larger-scale project approved by the university's ethics board. A mixed-methods approach was chosen due to the small sample size of participants who took part in the training to be evaluated (Creswell & Creswell, 2022). Additionally, adopting a pragmatic stance, both quantitative and qualitative data were incorporated to enhance the validity of the methodological approach (Anadón, 2019).

Sample and Procedure

Participants included four pre-service PE teachers (M_{age} = 23,75; SD = 0,5; women = 3) who attended the same francophone university in Quebec (Canada). They were randomly selected from those who participated in the first phase of the larger-scale project and indicated an interest in participating in the second phase by providing their email address at the end of an online questionnaire. In the context of the study, after their third year of initial training (May 2022), participants[1] took the training course "Learning How to Motivate," which was conducted via Zoom by the second author and recorded. To assess fidelity of implementation, the principal investigator reviewed the recordings and ensured that all theories and exercises were explained and conducted as expected. Before and after the training (April and May 2022), all participants completed a questionnaire regarding their motivational beliefs and appreciation

1 As part of their regular curriculum, participants were introduced to concepts related to motivational climate during their first year of initial training in a classroom management theoretical course in February 2020.

of the training. Finally, all took part in individual interviews in June 2022.

Development and Delivery of Training

The development of the training course "Learning How to Motivate" and the associated pedagogical tools (e.g., diagnostic tasks, a website, videos popularizing theoretical concepts and practical applications, and teaching scenarios) was financially supported by a pedagogical innovation fund from the university. It was created based on the results of individual interviews conducted with 18 pre-service PE teachers from five universities who took part to the first phase of the larger project to respond to their needs and anticipated challenges about sustaining students' motivation (de Guise et al., 2024). The content encompasses an inventory of 19 empowering motivational strategies (see Appendix A), which can be implemented in various ways, depending on the reality and professional context of the teachers, and, above all, on the diverse needs and abilities of the students. All activities aimed to support pre-service PE teachers in developing their reflective practice in applying these motivational strategies for the benefit of their students in accordance with their professional realities. In order to make the course accessible within the framework of the courses already offered in initial training, it was designed to last 3 hours, with additional activities that pre-service teachers could carry out to prepare for the course or consolidate learning.

Measures

In line with the first objective, participants completed a questionnaire to measure their beliefs about motivational strategies and their perceived competence in sustaining student motivation (T1). They completed a second questionnaire after taking the training course, which measured the same concepts (T2), along with their intention to use the empowering motivational strategies learned during the training. In line with the second objective, participants also completed a questionnaire assessing their appreciation of the training and participated in individual interviews to elaborate on their responses. During the interview and consistent with the third objective, they were also asked for suggestions on how to improve training.

Questionnaires

To assess beliefs about the 19 empowering motivational strategies (Appendix A) and 12 strategies likely to frustrate students' needs (Appendix B), a questionnaire designed by Reeve et al. (2014) and Aelterman et al. (2014) was used. For each strategy, participants were asked to rate their level of agreement on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) regarding efficacy (e.g., *This strategy is effective for motivating students in PE classes*), ease-of-implementation (e.g., *This strategy is feasible for motivating students in PE*) and normalcy (e.g., *This strategy is normal among PE teachers*).

To measure perceived competence about sustaining students' motivation in PE (in primary and high schools) we used the Competence scale (α = .80; Williams & Deci, 1996), which includes four items (e.g., *I feel confident in my ability to motivate students in primary/high school PE*). Participants responded on a Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*).

To assess pre-service PE teachers' appreciation of the training, we used the same 11 questions as Aelterman et al. (2013): seven addressed the training's acceptability in terms of interaction, innovation, interest, intelligibility, and essentiality, while the four others concerned practical usefulness, feasibility, intention to implement, and willingness to recommend to colleagues. Answers were rated on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

The intention to use the motivational strategies (Appendices A and B) was measured using the intention questionnaire developed by Aelterman et al. (2016). Participants responded on a 5-point Likert scale ranging from 1 (*no intention*) to 5 (*definitely have the intention*).

Interviews

Interviews were conducted via video conference using the Microsoft Teams network by a research assistant unfamiliar to the participants, who introduced himself before each interview and explained how he would help participants explore their feelings about the training. He listened to each answer, ensuring that respondents were comfortable voicing their opinions and sharing what they learned.

Interviews lasted approximately 60 minutes, and all data were recorded. All statements were transcribed, and personal information was retrieved (pseudonyms were used to ensure anonymity during analysis). Interview guides were designed with reference to research questions divided into three sections: learned motivational concepts during training, appreciation of the training, and intention to implement the motivational strategies learned.

Data Analyses

Quantitative Data

Descriptive statistics were calculated for each variable at each measurement time. Due to the small sample size, non-parametric tests were employed to analyze the quantitative data. To compare the scores (evolution of beliefs between T1 and T2), the Wilcoxon signed-rank test was used for related samples (Siegel & Castellan, 1988). To avoid type 2 errors, results trending toward significance ($p \leq .10$) were considered results of interest to the same degree as those reaching significance ($p \leq .05$), as in previous studies (Smith et al., 2017; Wahl-Alexander et al., 2017).

Qualitative Data

Data were analyzed using Nvivo 10 software according to L'Écuyer's model (1990) as is suggested for descriptive studies (Fortin & Gagnon, 2016): 1- Data were read multiple times, making it possible to provide a list of statements (and establish the meaning of each statement); 2- Data were divided based on the meaning of the statement (data codification); and 3- Statements were categorized using a mixed approach (Creswell & Creswell, 2022). This type of approach was privileged because categories about learned motivational strategies were pre-established based on the theoretical framework; however, other categories were inducted through analysis since it was impossible to predict which types of answers would emerge (L'Écuyer, 1990). In sum, the data yielded four main categories: 1) beliefs about the learned motivational strategies, 2) intention to apply learned strategies, 3) appreciation of the training, and 4) recommendations to improve the training. The first category comprised three subcategories: beliefs about efficacy, ease of implementation, and normalcy, based on Ajzen's (1991) framework. The second and

fourth categories had no subcategories, while the third category had the subcategories: appreciation of the knowledge acquired during training and appreciation of the training methods.

Results

Participants' Beliefs About Motivational Strategies

Quantitative Results

Table 1 shows changes in participants' beliefs about motivational strategies before (T1) and after the training (T2). A positive trend ($p \leq .10$) was observed for beliefs about efficacy and normalcy regarding the strategy "engage in non-instructional conversation" (relatedness support). Negative trends ($p \leq .10$) were observed regarding the efficacy belief about the strategies "use controlling strategies," "rely on authority in response to students' complaints/requests" (autonomy frustration), and "is distant from students" (relatedness frustration). A negative trend was also observed in the ease of implementation of the strategy "use controlling strategies" (autonomy frustration). There were no significant differences as regards participants' perceived competence about sustaining students' motivation in PE in primary school ($M_{\text{time 1}} = 4.08$; $M_{\text{time 2}} = 4.75$; $p = .09$) and high school ($M_{\text{time 1}} = 3.50$; $M_{\text{time 2}} = 3.50$; $p = 1.000$) before and after the training[2].

Qualitative Results

Concerning efficacy beliefs, the results suggest that training influences participants' beliefs about a specific learned strategy associated with the need for autonomy. They expressed how the training enhanced their understanding of the effectiveness of using rational explanations to increase students' interests and understanding of assigned tasks. For instance, Participant 1 (P1) says:

2 Post-hoc analyses (Wilcoxon signed rank test for related samples) were performed to check for a significant difference between pre-service PE teachers' perceived competence in primary and high schools at both measurement times. Results pointed to a trend ($p \leq .10$) at Time 2 ($Z_{\text{time1}} = -1.604$; $p = .109$; $Z_{\text{time2}} = -1.826$; $p = .068$), suggesting that participants' perceived competence to sustain students' motivation in high schools tended to be lower than for primary schools after the training.

Table 1
Changes in Pre-service Teachers' Beliefs About Motivational Strategies

Motivational strategies	Beliefs	*Z*	Mean (T1 / T2)
Engage in non-instructional conversation			
	Efficacy	-1.633; $p = .102$	2.75 / 4.50
	Normalcy	-1.732; $p = .083$	3.25 / 4.00
Use controlling strategies			
	Efficacy	-1.732; $p = .083$	2.00 / 1.25
	Ease-to-implement	-1.633; $p = .102$	2.75 / 1.50
Rely on authority in response to students' complaints/requests			
	Efficacy	-1.890; $p = .059$	3.25 / 1.75
Is distant from students			
	Efficacy	-1.633; $p = .102$	2.00 / 1.00

> To name why we do things, the benefits from the proposed exercise and just like giving more information to students because they don't know, if they don't like the activity to say 'why we do baskets?' Because it can help you with many other things […]. It means their level of engagement, of motivation, keeps increasing because they trust us (teachers) […] and they see you want them to feel good and to enjoy what they're doing.

With regard to strategies addressing the need for relatedness, participants noticed that sarcasm was not an effective way to maintain positive relationships with their students, something they had not considered before the training. As P2 observes:

> I know I tend to be sarcastic, […] and I used sarcasm because it's funny and students love it. But it's true that maybe sometimes, some students I don't know very well took it the wrong way […]. Maybe they laughed about it, but later when they went home they didn't find it funny at all, but all the other students laughed in front of me. It (the training) led me to think about that.

And by P3:

> Sarcasm was discussed (during the training). I know now that it's important to be careful when using it […] because

> not all children react well to this kind of intervention, and not all children understand it either. So, even if a student is sometimes receptive (to sarcasm), maybe other times, when he's not in a good mood, he won't handle it well. So sarcasm isn't the right way to get a message across, and that's why I understood we should think twice about using it.

As for the beliefs regarding the ease of implementing the learned strategies, participants reported that while they understood the importance of planning variations for a task, they find it especially challenging and unrealistic to do so when dealing with diverse abilities and levels of progress. In P4's words:

> To plan a lot of variations in advance, sometimes, it can be a little unrealistic, for example, in the case of a teacher who works full time. Maybe in the beginning of the year, there's time to plan courses and all, but time gets away from you as the year goes on.

In a broader sense, participants perceived the difficulty of supporting all three psychological needs at once. P2 reported specifically that:

> I'd like my students to say it was the best course they had, but were they motivated? Did they get in touch with their feelings and their needs for achievement? Did I enable them to progress both physically and cognitively? I feel like that's a lot to manage in addition to creating a climate where everybody has a sense of safety and well-being.

Participants noted that some strategies learned during training were not very common among PE teachers. Similarly, they addressed concerns about the ease of implementing diverse task variations and suggested that planning such variations was not a widespread practice. P4, for instance, noted that some PE teachers "come to a point where they stop identifying the signs of a student who finds it too easy or too difficult. They propose a task, get them started and that's that." Similarly, participants observed that teachers didn't usually establish connections with students, especially in high school. P1 indicated that they were "really surprised (to learn) that it's impor-

tant to chat about things unrelated to teaching to establish a stronger relationship with them (students), that the stronger the relationship, the better the motivational climate." This strategy was unexpected since they hadn't seen their colleagues establishing connections with students during his high school internship.

Participants' Intention to Apply Learned Strategies

Quantitative Results

Table 2 shows changes in participants' intention to implement motivational strategies before (T1) and after (T2) the training. A positive trend ($p \leq .10$) was observed for the intention to "engage in non-instructional conversation" (relatedness support), while a negative trend ($p \leq .10$) was observed for the intention to "use sarcasm" (relatedness thwarting).

Table 2

Changes in Pre-service Teachers' Intention to Apply Motivational Strategies

Motivational strategies	*Z*	Mean (T1/T2)
Engage in non-instructional conversation	-1.633; $p = .102$	3.00 / 4.00
Use sarcasm	-1.633; $p = .102$	2.25 / 1.25

Qualitative Results

Participants expressed appreciation for learning how to incorporate students' interests and perceptions into their teaching practices. P1, in particular, emphasized how "this, it really held his (my) interest, and it's really something he (I)'d like to do later on." Next, they discussed allowing students to learn on their own and at their own pace. P2 shared how this aligned with his current approach to working with students:

> Everything that involves learning by experience […]. You know, just guiding the students. Yes, you establish a structure, but only to guide them so they can learn by themselves. I really like that idea, and it supports the need for autonomy […]. I know because I've been using it for many years and I really like it.

They also reported their intention to establish an environment where students feel safe. P2, again, said how working collaboratively was a way to promote the inclusion of all students and how this "would be something he (I) would like to reproduce." Finally, because participants understood that sarcasm was not the right way to maintain a good relationship with students, all said they intended to use it less or not at all. One participant, for example, stated that: "using sarcasm, it's not something I tended to do, but let's just say that now I'll be more careful" (P3).

Appreciation of the Training

Quantitative Results

Table 3 presents descriptive statistics regarding participants' appreciation of the training, with scores being quite high for all items.

Table 3
Participants' Appreciation of the Training

Appreciation	Mean (*SD*)	Min–Max
Acceptability of the training		
Interaction	4.75 (.50)	4.00 – 5.00
Innovation	4.75 (.50)	4.00 – 5.00
Interest	4.88 (.25)	4.50 – 5.00
Intelligibility	4.88 (.25)	4.50 – 5.00
Essentiality	5.00 (.00)	5.00 – 5.00
Practical usefulness	5.00 (.00)	5.00 – 5.00
Feasibility	4.50 (.58)	4.00 – 5.00
Intention to implement	5.00 (.00)	5.00 – 5.00
Recommendation	4.75 (.50)	4.00 – 5.00

Qualitative Results

Participants expressed their appreciation for the training based on two key aspects: knowledge acquired and training methods. In terms of knowledge, participants strongly valued the opportunity to consolidate existing knowledge from previous courses in their teacher training program and develop new insights. They particularly appreciated the review of the definitions of the four dimensions of an empowering motivational climate and the various types of motivation (e.g., "Honestly, I think the training was awesome. There

were concepts we already talked about, but the course let me go a little deeper and learn how to apply the concepts in practice" [P4]). Additionally, all participants reported their appreciation for the strategies they learned during training. Table 4 presents the strategies they considered important for their future practice, as identified during the interviews. For example, one participant stated that: "I liked that it's important to listen to students' needs and demands and take them into consideration when planning (your lesson) […]. I feel that's really important" (P4).

In summary, the data indicate that participants learned a wide range of strategies related to the three psychological needs. They particularly valued the training for offering various approaches to support their students' motivation within the context of PE.

Participants appreciated the training methods for various other reasons as well. First, everyone found that the tools employed facilitated integration of the learning content presented during the training. The teaching scenarios, in particular, were highly valued, as reported by P4:

> It was a chance to broaden my knowledge because it gave concrete examples of certain types of situations and certain concepts that were in the training […]. It was good because

Table 4
Reported Learned Strategies During Training

Autonomy support strategies
Explain rationale
Consider students' interests and perceptions
Ask students questions
Allow students to learn at their own pace
Give students choices
Competence support strategies
Use variation
Emphasize progress
Use cooperative learning
Relatedness support strategies
Establish a safe climate
Take an interest in students' life
Chat with students about subjects unrelated to teaching
Make sure all students feel included

> it showed what we should say as teachers, what types of behavior, what changes to make in how we talk, in what we say to students to implement the strategies, it's subtle too sometimes. […]. It also lets you show how, OK, it's not really that complicated; it showed that it was realistic.

Furthermore, P1 noted how the tools prompted him to "really think about the different types of situations they would face and how they could react appropriately to these situations." Second, participants highly appreciated the synchronous nature of the training. They felt that the discussions, both among participants and with the trainer, allowed them to broaden their knowledge and "better understand different points of view" (P2). They also felt that the live format facilitated direct feedback on their opinions or uncertainties about certain aspects of the training. Finally, all participants expressed their appreciation for the trainer's delivery and the quality of the visual content. P3 summed it up as follows:

> It was clear, the colors were cute, it seems silly but these are things that get us to pay attention in my opinion. It was well presented, it was clear, and the trainer was dynamic, which made it fun. It was fun having a presentation with her […], it made us want to listen. And she notices when we've had enough.

Recommendations to Increase the Quality of the Training

A common point among participants was the desire for practical application of the concepts learned. P1 proposed incorporating into the training "live situations, concrete situations that only happen during gym period in high school." Participants emphasized that such additions would help in the practical application of their learning and that direct feedback from the trainer would enhance their understanding of how to implement the strategies. Similarly, they expressed the need for post-training follow-up, suggesting discussion groups to share experiences or having the trainer visit their gym for observation and feedback on their ability to support students' psychological needs. Finally, all participants discussed the importance of conducting the training before their high school internships, emphasizing its greater relevance in this context.

Discussion

This pilot study used a mixed-methods procedure to evaluate the first delivery of the training course "Learning How to Motivate" to pre-service PE teachers. Although there were only four participants, the combination of quantitative and qualitative results indicated that beliefs about efficacy and normalcy, as well as the intention to apply some of the learned motivational strategies, tended to evolve after the completion of training. It would therefore seem that the addition of training that offers explicit strategies on how to create an empowering motivational climate during PE initial training (e.g., *Learning how to motivate*) could effectively contribute to the evolution of pre-service PE teachers' beliefs about, and intention to use, empowering motivational strategies. Furthermore, based on Ajzen's framework (1991), one can reasonably assume that participants would attempt, at least, to apply more empowering motivational strategies in their practice. If so, this would suggest that the training could help provide useful tools to meet the challenges anticipated by pre-service PE teachers regarding students' lack of engagement and motivation in PE (de Guise et al., 2024). Even after the training, however, pre-service teachers still had difficulty understanding how to implement some of the strategies they had learned. Thus, in view of how the belief about ease of implementation can predict perceived competence rather than mere intention to apply the strategy (Ajzen et al., 2018), it would be interesting to offer additional opportunities for practice during teacher training. Theoretical and practical courses would then be coordinated, as recommended by CAPFE (2022), much to the appreciation of pre-service PE teachers (de Guise et al., 2024).

PE teachers are also concerned with classroom management (de Guise et al., 2024; Dias-Lacy & Guirguis, 2017; Mäkelä et al., 2014), an issue sometimes explained by students' lack of motivation (Rodrigues et al., 2020). Accordingly, it is interesting to note that, subsequent to the training, participants were less likely to believe in the effectiveness of disempowering motivational strategies such as the use of control or reliance on authority in response to students' lack of motivation, since these strategies are known to frustrate students' needs. This suggests that the training helped pre-service PE teachers better understand how these strategies inhibit, rather than support, students' motivation.This is a meaningful finding considering that

high school PE teachers often tend to use a controlling approach in response to students' disturbing behaviors (Bonniot-Paquien et al., 2009; Reeve, 2009). Finally, although participants' perceived competence did not change significantly after the training, it appears that their perceived competence in high schools was lower than in primary schools following the same training. This result is consistent with the well-documented decrease in motivation observed between primary and high school students as they get older (Dishman et al., 2018; Mercier et al., 2017). In this sense, if the training was offered prior to pre-service teachers' high school internship (as the participants suggested), it could address the challenges they anticipate regarding teenagers' lack of motivation (de Guise et al., 2024).

Among the strategies discussed with participants during training, and with regard to both quantitative and qualitative results, two motivational strategies—empowering and disempowering—regarding the need for relatedness attracted our attention. First, to support this need, the recommendation is to engage in non-instructional conversations with students (de Guise et al., 2024). Indeed, a study by Rousseau et al. (2009) reports that teenagers who present academic difficulties say they develop better teacher-student relationships with teachers who demonstrate an interest in their lives outside of school and who share their own life experiences. It appears this aspect was enlightening for participants in the present study, as their beliefs about efficacy and normalcy, along with their intention to apply it, tended to evolve positively. This was the case even though participants reported that such a teacher-student connection seemed unusual for PE teachers, especially in high schools. Second, after completing the training, participants understood how the use of sarcasm, which can frustrate the need for relatedness, was ineffective. Their intention to use it thus tended to evolve negatively. The pre-service teachers even mentioned they would try to use it less or not at all, although they first reported doing it to make students laugh. In our view, this learning is very important as a way to distinguish humor from sarcasm. Indeed, according to Instructional Humor Processing Theory (Wanzer et al., 2010), the relationship between teachers' humor and students' learning is a complex process: if the student fails to grasp the incongruity of the teacher's message, as can be the case when sarcasm is used, the student will not understand the humor

and may be distracted or confused by it (St-Amand et al., 2021). Consistent with this, a recent study indicates that humor related to course content, which is considered appropriate, is positively associated with students' sense of relatedness, while other-disparaging humor, which is inappropriate, is negatively related to it (St-Amand et al., 2023). For these reasons, we believe that initial training is a good opportunity to develop pre-service teachers' skills in using humor as a pedagogical strategy when dealing with unmotivated students, as recommended by St-Amand et al. (2021). In light of our results, the training course "Learning How to Motivate" appears effective for discussing this aspect with pre-service PE teachers.

Participants appreciated the training for several reasons consistent with some of the characteristics of effective professional development (Darling-Hammond et al., 2017). Based on our results, for example, the training:

- Was content focused (e.g., *definitions of the dimensions of the motivational climate*, *types of motivation*, *motivational strategies supported by empirical evidence*);
- Prompted active learning (e.g., *teaching scenarios*) and collaboration (e.g., *synchronous aspect of the training, discussions among participants and with the trainer*);
- Included a trainer who acted as a model in meeting the needs of participants during training (e.g., *autonomy = provision of various approaches; competence = offering guidance through the strategies, tools helped integrated the learning content; relatedness = trainer was energetic, and held participants' attention*);
- Included a trainer who provided feedback (e.g., *direct feedback*) and reflection (e.g., *opportunities to think about how to react in different realistic situations*);
- Included a trainer who provided coaching and expert support (e.g., *the trainer was able to explain the application of the motivational theories clearly and identify when participants needed more support*).

Even if the training was appreciated, there were recommendations for improvement. First and foremost, the sustained duration aspect of the training was not achieved, as more than three hours of training are needed, a fact reflected in participants' wish for post-

training follow-up. This element is all the more important because the participants in our sample had already been introduced to these motivational concepts during their first year of initial training. The training was therefore an opportunity to consolidate their learning while building on the experience gained in previous theoretical courses (e.g., classroom management) and internships. This aspect was appreciated owing to the absence of pedagogical continuity during initial training (Desbiens et al., 2019). However, participants who had not previously been introduced to these concepts may well have viewed this differently.

To better address the ease-of-implementation belief, and in keeping with participants' suggestions, it is recommended to provide more opportunities for practice with "expert support" (e.g., teacher trainers, cooperative teachers, internship supervisors), thereby allowing pre-service teachers to develop sufficient confidence to apply what they learned in theoretical courses (Aelterman et al., 2016; Fleitz, 2004). These attempts should be done in conjunction with reflective practice (Campanale, 2007; Rondeau & Jutras, 2019) on their experiences (e.g., during internships or practical courses). For example, using an analysis grid for self-assessment or co-observation between colleagues could be a low-cost strategy (Girard & Hogue, 2023). Participants also offered interesting suggestions about sustaining the duration of the training, including follow-up discussions after implementing the learned strategies (e.g., in internship seminars) during which motivational challenges encountered in realistic situations and possible solutions could be addressed.

Limitations

This study is not without its limitations. The small sample size is largely the result of post-pandemic realities, which affected our capacity to recruit participants: pre-service teachers were, in fact, tired of being asked to participate in Zoom meetings. Furthermore, due to the small sample size, conclusions drawn from the quantitative data were limited. Nevertheless, the mixed-methods procedure employed allowed us to use qualitative data to further our understanding of the quantitative data, thereby helping to overcome this limitation. Finally, all participants were from the same university and were introduced to the subject earlier in their program. Results may therefore have differed for pre-service PE teachers from other universities

following another curriculum. Future studies using a larger sample from different universities would consequently be necessary to generalize our conclusions.

Conclusion

This pilot study offers interesting insights into how pre-service teachers can be supported in creating an empowering and motivational climate. Indeed, the training course "Learning How to Motivate" appears to be a promising way to consolidate pre-service teachers' understanding of empowering motivational strategies. For university trainers, this training, along with the accompanying pedagogical tools, could provide significant consistency and continuity across and within courses during the four years of initial training, thereby enhancing pre-service teachers' professional development.

References

Adamakis, M., & Zounhia, K. (2016). The impact of occupational socialization on physical education pre-service teachers' beliefs about four important curricular outcomes. *European Physical Education Review, 22*(3), 279–297. https://doi.org/10.1177/1356336x15605519

Aelterman, N., Vansteenkiste, M., Van den Berghe, L., De Meyer, J., & Haerens, L. (2014). Fostering a need-supportive teaching style: Intervention effects on physical education teachers' beliefs and teaching behaviors. *Journal of Sport & Exercise Psychology, 36*, 595–609. https://doi.org/10.1123/jsep.2013-0229

Aelterman, N., Vansteenkiste, M., Van Keer, H., De Meyer, J., Van den Berghe, L., & Haerens, L. (2013). Development and evaluation of a training on need-supportive teaching in physical education: Qualitative and quantitative findings. *Teaching and Teacher Education, 29*, 64–75. https://doi.org/10.1016/j.tate.2012.09.001

Aelterman, N., Vansteenkiste, M., Van Keer, H., & Haerens, L. (2016). Changing teachers' beliefs regarding autonomy support and structure: The role of experienced psychological need satisfaction in teacher training. *Psychology of Sport and Exercise, 23*, 64–72. https://doi.org/10.1016/j.psychsport.2015.10.007

Ahmadi, A., Noetel, M., Parker, P., Ryan, R. M., Ntoumanis, N., Reeve, J., Beauchamp, M., Dicke, T., Yeung, A., Ahmadi, M., Bartholomew, K., Chiu, T. K. F., Curran, T., Erturan, G., Flunger, B., Frederick, C., Froiland, J. M., González-Cutre, D., Haerens, L., & Jeno, D. (2023). A classification system for teachers'

motivational behaviors recommended in self-determination theory interventions. *Journal of Educational Psychology, 115*(8), 1158–1176. https://doi.org/10.1037/edu0000783

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179–211.

Ajzen, I., Fishbein, M., Lohmann, S., & Albarracín, D. (2018). The influence of attitudes on behavior. In D. Albarracín & B. T. Johnson (Eds.), *The handbook of attitudes* (2nd ed.). Routledge.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80*(3), 260–267. https://doi.org/10.1037/0022-0663.80.3.260

Anadón, M. (2019). Les méthodes mixtes: Implications pour la recherche dite qualitative. *Recherches qualitatives, 38*(1). https://doi.org/10.7202/1059650ar

Berger, J.-L., & Girardet, C. (2016). Les croyances des enseignants sur la gestion de la classe et la promotion de l'engagement des élèves: Articulations aux pratiques enseignantes et évolution par la formation pédagogique. *Revue française de pédagogie, 196*, 129–154. https://doi.org/10.4000/rfp.5099

Bernstein, E., Herman, A. M., & Lysniak, U. (2013). Beliefs of pre-service teachers toward competitive activities and the effect on implementation and planning for physical education classes. *Teacher Education Quarterly, 40*(4), 63–79. https://www.jstor.org/stable/teaceducquar.40.4.63

Bonniot-Paquien, N., Cogérino, G., & Champely, S. (2009). Les enseignants d'ÉPS face aux élèves qui décrochent de l'activité: Intervention selon le sexe des élèves et discours relatifs aux comportements observés. *Revue internationale des sciences du sport et de l'éducation physique, 84*(2), 77–92. https://doi.org/10.3917/sta.084.0077

Campanale, F. (2007). Analyse réflexive et autoévaluation dans la formation des enseignants: Quelles relations? In A. Jorro (Ed.), *Évaluation et développement professionnel*. Éditions l'Harmattan.

Casillo-Jiménez, N., López-Walle, J. M., Tomás, I., Tristán, J., Duda, J. L., & Balaguer, I. (2022). Empowering and disempowering motivational climates, mediating psychological processes, and future intentions of sport participation. *International Journal of Environmental Research and Public Health, 19*(2), 896–910. https://doi.org/10.3390/ijerph19020896

Comité d'agrément des programmes de formation à l'enseignement (CAPFE). (2022). *Guide de rédaction: Demande d'agrément d'un nouveau programme de formation à l'enseignement de 1er cycle ou de deuxième cycle.* https://cdn-contenu.quebec.ca/.../CAPFE_guide_redaction_nouveau_programme.pdf

Creswell, J. W., & Creswell, J. D. (2022). *Research design* (6th ed.). SAGE Publications. https://bookshelf.vitalsource.com/books/9781071817964

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development.* Learning Policy Institute. https://learningpolicyinstitute.org/product/teacher-prof-dev

de Guise, A.-A., Girard, S., & Boulanger, M. (2024). Pre-service PE teachers' perceptions of anticipated challenges and needs during initial training. *Canadian Journal of Higher Education, 54*(1), 1-13. https://doi.org/https://doi.org/10.47678/cjhe.vi.189943

de Guise, A.-A., Girard, S., Lemoyne, J., & Desbiens, J.-F. (2024). Stratégies motivationnelles : Analyses des croyances des étudiants en éducation physique et à la santé Revue phénEPS/ *PHEnex Journal, 14*(2), 1-26.

de Guise, A.-A., Girard, S., Lemoyne, J., & Desbiens, J.-F. (accepted, 2024). Rôle des expériences préprofessionnelles des étudiants en enseignement de l'éducation physique et à la santé sur les croyances au regard du soutien de la motivation des élèves Revue des sciences de l'éducation.

Desbiens, J.-F., Correa Molina, E., & Habak, A. (2019). Alternance, discontinuités et difficultés rencontrées en formation initiale des enseignants. *Éducation & Formation, e-314*.

Dias-Lacy, S. L., & Guirguis, R. V. (2017). Challenges for new teachers and ways of coping with them. *Journal of Education and Learning, 6*(3). https://doi.org/10.5539/jel.v6n3p265

Dishman, R. K., McIver, K. L., Dowda, M., & Pate, R. R. (2018). Declining physical activity and motivation from middle school to high school. *Medicine & Science in Sports & Exercise, 50*(6), 1206–1215. https://doi.org/10.1249/MSS.0000000000001542

Doolittle, S. (2016). Engaging middle school students in physical education and physical activity programs. *Journal of Physical Education, Recreation & Dance, 87*(6), 29–34. https://doi.org/10.1080/07303084.2016.1192940

Duda, J. L., Appleton, J. J., Stebbings, J., & Balaguer, I. (2018). Towards more empowering and less disempowering environments in youth sport. In C. J. Knight, C. G. Harwood, & D. Gould (Eds.), *Sport psychology for young athletes.* Routledge.

Ensign, J., Mays Woods, A., & Kulinna, P. H. (2018). Entering the field of physical education: The journey of fifteen first-year teachers. *Research Quarterly for Exercise and Sport, 89*(1), 66–79. https://doi.org/10.1080/02701367.2017.1408951

Fleitz, T. (2004). Formation continue et transformation des pratiques enseignantes: Le rapport à la formation. *Savoirs, 4*, 79–97. https://doi.org/10.3917/savo.004.0079

Fortin, M.-F., & Gagnon, J. (2016). *Fondements et étapes du processus de recherche: Méthodes quantitatives et qualitatives* (3rd ed.). Chenelière Éducation.

Girard, S., & de Guise, A.-A. (2024). Effects of the Learning How to Motivate training on pupils' motivation and engagement during pre-service physical education teachers' internship. *Frontiers in Education, 9*, 1-12. https://doi.org/10.3389/feduc.2024.1397043

Girard, S., de Guise, A.-A., & Boulanger, M. (2023). Apprendre à motiver aux futurs enseignants d'éducation physique. *Revue internationale de pédagogie de l'enseignement supérieur, 39*(3), Article 5144. https://doi.org/10.4000/ripes.5144

Girard, S., de Guise, A.-A., & Boulanger, M. (accepted, 2024). Physical education pre-service teachers' beliefs about motivational strategies observed during internship. *McGill Journal of Education.*

Girard, S., Desbiens, J.-F., & Hogue, A.-M. (2023). Effects of a training course on creation of an empowering motivational climate in physical education: A quasi-experimental study. *Physical Education and Sport Pedagogy, 28*(1), 56-75. https://doi.org/10.1080/17408989.2021.1953457

Girard, S., & Hogue, A.-M. (2023). Le climat motivationnel en éducation physique et à la santé. In S. Turcotte, J.-F. Desbiens, C. Borges, J. Grenier, & D. Pasco (Eds.), *Enseigner l'éducation physique en contexte scolaire* (pp. 255-288). Éditions JFD.

L'Écuyer, R. (1990). *Méthodologie de l'analyse développementale de contenu: Méthode GPS et concept de soi.* Presses de l'Université du Québec.

Mäkelä, K., Hirvensalo, M., & Whipp, P. R. (2014). Should I stay or should I go? Physical education teachers' career intentions. *Research Quarterly for Exercise and Sport, 85*(2), 234–244. https://doi.org/10.1080/02701367.2014.893052

Mastagli, M., Van Hoye, A., Hainaut, J.-P., & Bolmont, B. (2022). The role of an empowering motivational climate on pupils' concentration and distraction in physical education. *Journal of Teaching in Physical Education, 41*(2), 311–321. https://doi.org/10.1123/jtpe.2020-0252

Mercier, K., Donovan, C., Gibbone, A., & Rozga, K. (2017). Three-year study of students' attitudes toward physical education: Grades 4–8. *Research Quarterly for Exercise and Sport, 88*(3), 307–315. https://doi.org/10.1080/02701367.2017.1339862

Milton, D., Appleton, P. R., Bryant, A., & Duda, J. L. (2018). Initial validation of the teacher-created empowering and disempowering motivational climate questionnaire in PE (EDMCQ-PE). *Journal of Teaching in Physical Education, 37*(4), 340–351. https://doi.org/10.1123/jtpe.2018-0119

Murayama, K. (2018). The science of motivation. *Psychological Science Agenda, 32*(6). http://www.apa.org/science/about/psa/2018/06/motivation.aspx

ParticipACTION. (2022). *Lost and found: Pandemic-related challenges and opportunities for physical activity.* https://www.participaction.com/wp-content/uploads/2022/10/2022-Children-and-Youth-Report-Card.pdf

Reeve, J. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students benefit. *The Elementary School Journal, 106*(3), 225–236.

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159–175. https://doi.org/10.1080/00461520903028990

Reeve, J., Vansteenkiste, M., Assor, A., Ahmad, I., Cheon, S. H., Jang, H., Kaplan, H., Moss, J. D., Olaussen, B. S., & Wang, C. K. J. (2014). The beliefs that underlie autonomy-supportive and controlling teaching: A multinational investigation. *Motivation and Emotion, 38*(1), 93–110. https://doi.org/10.1007/s11031-013-9367-0

Rodrigues, F., Teixeira, D. S., Neiva, H. P., Cid, L., & Monteiro, D. (2020). The bright and dark sides of motivation as predictors of enjoyment, intention, and exercise persistence. *Scandinavian Journal of Medicine & Science in Sports, 30*(4), 787–800. https://doi.org/10.1111/sms.13617

Rondeau, K., & Jutras, F. (2019). *L'accompagnement du développement personnel et professionnel en éducation: S'accompagner, accompagner, être accompagné.* Presses de l'Université du Québec.
Rousseau, N., Deslandes, R., & Fournier, H. (2009). La relation de confiance maître–élève: Perception d'élèves ayant des difficultés scolaires. *McGill Journal of Education, 44*(2), 193–211. https://doi.org/10.7202/039032ar
Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54–67. https://doi.org/10.1006/ceps.1999.1020
Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology.* https://doi.org/10.1016/j.cedpsych.2020.101860
Siegel, S., & Castellan, N. J., Jr. (1988). *Nonparametric statistics for the behavioral sciences* (2nd ed.). McGraw-Hill.
Smith, N., Quested, E., Appleton, P. R., & Duda, J. L. (2017). Observing the coach-created motivational environment across training and competition in youth sport. *Journal of Sports Sciences, 35*(2), 149–158. https://doi.org/10.1080/02640414.2016.1159714
St-Amand, A., Smith, J., Béland, S., & Moreau, D. (2021). Understanding teachers' humor and its attributes in classroom management: A conceptual study. *Educational Sciences: Theory and Practice, 21*(2), 115–130. https://doi.org/10.12738/jestp.2021.2.008
St-Amand, J., Smith, J., & Goulet, M. (2023). Is teacher humor an asset in classroom management? Examining its association with students' well-being, sense of school belonging, and engagement. *Current Psychology.* https://doi.org/10.1007/s12144-023-04481-9
Sum, R. K. W., Wallhead, T., Wang, F.-J., Choi, S.-M., Li, M.-H., & Liu, Y. (2022). Effects of teachers' participation in continuing professional development on students' perceived physical literacy, motivation and enjoyment of physical activity. *Revista de Psicodidáctica (English ed.), 27*(2), 176-185. https://doi.org/10.1016/j.psicoe.2022.05.003
Tannehill, D., MacPhail, A., Walsh, J., & Woods, C. (2015). What young people say about physical activity: The Children's Sport Participation and Physical Activity (CSPPA) study. *Sport, Education and Society, 20*(4), 442–462. https://doi.org/10.1080/13573322.2013.784863

Verret, C., Grenier, J., Massé, L., & Bergeron, G. (2017). *Enquête provinciale sur les pratiques inclusives en enseignement de l'éducation physique et à la santé: Rapport provincial primaire et secondaire.* Ministère de l'Éducation et de l'Enseignement supérieur. https://inclusion-eps.uqam.ca/diffusion/

Wahl-Alexander, Z., Richards, K. A., & Washburn, N. (2017). Changes in perceived burnout among camp staff across the summer camp season. *Journal of Park and Recreation Administration, 35*(2), 74–85. https://doi.org/10.18666/jpra-2017-v35-i2-7417

Wanzer, M. B., Frymier, A. B., & Irwin, J. (2010). An explanation of the relationship between instructor humor and student learning: Instructional humor processing theory. *Communication Education, 59*(1), 1–18. https://doi.org/10.1080/03634520903367238

Appendix A

Empowering Motivational Strategies Addressed in the Course, Learning How to Motivate

Motivational climate dimensions	Empowering motivational strategies
Autonomy support	1. Acknowledges students' interests, feelings and perspective. 2. Provides reasons for pedagogical choices, constraints, tasks and organizational decisions. 3. Provides meaningful choices to students. 4. Allows students autonomy and a sense of control regarding their learning. 5. Provides opportunity for students input (e.g., give their opinion, make changes to tasks, make suggestions).
Competence support – mastery (AGT)	1. Uses cooperative learning. 2. Demonstrates the tasks himself (herself) and/or uses students as positive "role model". 3. Emphasizes task-focused positive competence feedback. 4. Emphasizes/recognizes effort, improvement and/or engagement in the learning process rather than student performance. 5. Allows students to progress according to their strengths and weaknesses.
Competence support – structure (SDT)	1. Gives clear instructions about the content and structure of the lesson. 2. Monitors if students consequently live up to the instructions. 3. Reviews with students the overall lesson content and structure.
Relatedness support	1. Values students. 2. Is enthusiastic and eager. 3. Develops and maintains good relationships with students. 4. Shows care and concern for students. 5. Addresses students by their first name when the opportunity occurs. 6. Is involve in students live outside of PE hours.

Note: Inspired by Girard, Desbiens et al. (2023), Girard, de Guise & Boulanger (accepted, 2024) and Ahmadi et al. (2023)

Appendix B

Dismpowering Motivational Strategies

Motivational climate dimensions	Disempowering motivational strategies
Autonomy frustration – Control	1. Uses controlling strategies. 2. Uses extrinsic rewards. 3. Relies on authority in response to students' complaints/requests.
Competence frustration – Chaos (SDT)	1. Gives few or no explanations or they are imprecise. 2. Leaves students to themselves during the task. 3. Demonstrated little consistency and coherence/is unpredictable.
Competence frustration – Performance (AGT)	1. Emphasizes/recognizes inferior/superior performance and ability. 2. Encourages rivalry between students. 3. Emphasizes errors and/or performance.
Relatedness frustration	1. Restricts opportunities for interactions and conversation 'with' and 'between' students. 2. Is distant from students 3. Uses sarcasm

Note: Inspired by Girard, Desbiens et al. (2023)

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RECREATION

Hiking in Nature for Those With Bipolar Disorder

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Abstract

Throughout recorded human history, there has been the conviction that connecting with the natural world improves wellbeing. Even with this knowledge, we are becoming more detached from nature both physically and psychologically. Although the psychological positive effect of being in nature is clearly seen in research, the concept of hiking in natural settings for those with bipolar disorder (BD) is not distinctly observed in the literature. It is a common notion that the main reason people hike is to immerse themselves in nature. For those with BD, the benefits of the leisure experience of hiking in nature offer a chance to escape the chaos of life's challenges that one may face with having an often-debilitating mental illness. Other benefits of this leisure experience include physical activity, which provides opportunities for self-efficacy development, practicing mindfulness, experiencing "awe" on occasion, and strengthening resilience. The goal of this paper is to better understand the impact of hiking in nature for those with the mental challenges of BD.

Introduction

This manuscript aims to inform individuals, providers, and caregivers about the potential impact of hiking in nature on individuals with BD. Hiking is often referred to as a soft adventure (Bichler &

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Peters, 2021) that offers motivational factors, including the opportunity to form new insights, relax from everyday life, develop and improve skills, and acquire new knowledge. Additionally, essential factors for the soft adventure context include developing personal limits, experiencing a different setting, fostering a sense of belonging, and involvement in all-encompassing natural settings (Pomfret & Bramwell, 2016). It is well known that hiking is a popular recreational activity that provides positive impacts on health and well-being (Gross & Sand, 2019; Han et al., 2020). Yet, the concept of hiking for individuals with a diagnosis of BD is underexplored. Individuals with BDs are often characterized by clinical complexity, swift changes in behavioral and affective domains, risk of relapse, and the potential for negative responses to treatments. Current treatments are often seen as only partially effective. Three-fourths of people with BD have a history of additional, coexisting mental health conditions, which are generally anxiety disorders, attention-deficit/hyperactivity disorders, and substance use disorders. There are physical problems associated with BD that include a two-fold risk of cardiovascular disease compared to the general population, as well as an increased incidence of obesity, diabetes, and sedentary behavior (Marzani & Price, 2021). Those with BD have a 9.2-year decrease in expected life span due to several lifestyle factors, and as many as one in five patients with BD complete suicide (Nierenberg et al., 2023). Not surprisingly, the chronic nature, the recurrence of manic and/or depressive symptoms, and the high prevalence of co-morbidities have a major impact on the physical and psychological domains of those with BD that affect well-being and quality of life.

Bipolar Disorder and Hiking Excursion

To evaluate the potential benefits of hiking for those with BD, it is essential to understand the characteristics of this disorder. The main types of BDs include bipolar I, bipolar II, and cyclothymia. BD is a chronic mental health disorder characterized by severe highs and lows in mood and energy. Mania (or hypomania, with less intense symptomatology) symptoms are characterized by inflated grandiosity, decreased need for sleep, pressured speech, flight of ideas or subjectively racing thoughts, distractibility, an increase in goal-directed activity or psychomotor agitation, and excessive involvement in activities with high potential for painful consequences.

Often occurring cyclically are depressive episode symptoms that are characterized by depressed or irritable mood and markedly diminished interest/pleasure in all (or almost all) activities most of the day, nearly every day. Also, symptoms include weight changes, insomnia, or hypersomnia; psychomotor agitation or retardation, fatigue, feeling worthless or excessive/inappropriate guilt, decreased concentration, and thoughts of death/suicide (Marzai & Price, 2021). Healthy lifestyle alterations, including physical activity such as hiking, can be a significant part of overall recovery for individuals with BD (Mental Health America, 2023). Additionally, a review focusing on outdoor recreation, which included hiking, found that this activity can be viewed as a therapeutic medium for enhancing the quality of life for individuals with mental health disorders (Frances, 2006).

There are different conceptualizations of what one person perceives as a hike compared to that of another. For this manuscript, hiking refers to a long, vigorous walk in a natural setting, often on trails or paths in areas such as parks, forests, or mountains. Characteristics of hiking vary and include duration, nature experience, physical activity, and terrain. Hikes can vary in length from a few miles to multiday treks. The focus is generally on the experience of being in nature rather than merely getting from one point to another. It can include natural scenery, outdoor spaces, and wildlife, which is often found in more remote environments. Hiking is considered a physical activity for all fitness levels, from easy to strenuous, depending on the desires of the individual. Furthermore, hiking often involves traversing trails with uneven or rugged terrain, which can include mountains, hills, creeks, and forested areas. Usually, when one is on an urban or paved path, this activity would be considered walking. Hiking can be done as a solo activity or in a group setting. Hiking can also have a more specialized therapeutic approach, with programs such as wilderness therapy, adventure-based therapy, or nature-based rehabilitation. However, hiking, in a more general sense, also has the potential to be "therapeutic," as this paper will explore. The focus of this manuscript is more generally on the concepts of hiking in nature and its applicability to individuals with BD.

For those with BP preparing for a hiking excursion, they need to be under the care of a provider who is aware of the patient's physical and mental history and the appropriateness of their involvement in

this activity, individually or in a group-like setting. In both scenarios, it is crucial to inform providers and loved ones of the plans for a hike, particularly if it involves being on the trail for more than a day. It is also important to be stable on medication and other necessary treatment regimens. Potential hikers are advised to research trails and consider their physical capabilities, especially if they are inexperienced. Ideally, the hiker is not experiencing symptoms of mania (hypomania) and is in a state of euthermia, as studies suggest that vigorous exercise may exacerbate a manic state (Antosik-Wojcinska et al., 2020). Other potential shortcomings of the hiking experience may relate to the mood-regulating circuits in the brain that can be oversensitive to conditions that affect mood, including exercise.

Additionally, it has been found that activities involving a reward seem to trigger escalations in manic symptoms and with consistent progress toward rewards, can trigger increased energy and activation (Fulford et al., 2010). An issue may ensue if a hiker goes beyond their physiologic and psychologic capabilities and overexerts, which is possible since BD is associated with grandeur thinking as well as reward-seeking behavior. Also, compared to healthy controls, people with BD report that attaining their goals is extremely critical to their self-worth (Tharp et al., 2016). This is important to consider when hiking, given the variable nature of the activity, which often results in not reaching the desired destination due to unforeseen factors. This highlights the potential need for planning shorter day trips, rather than extended expeditions, for individuals with BD, particularly for the beginning hiker. It is necessary to acknowledge this information due to the complex needs of individuals with BD, particularly in relation to new experiences and the vulnerability of emotional lability. Even with these drawbacks in mind, considering the positive features of hiking in nature is imperative.

The Natural Environment

Bratman and colleagues (2019) found that spending time in nature was correlated with increases in subjective well-being, positive affect, and a sense of purpose and meaning in life, as well as decreases in mental distress. In addition, with longitudinal studies, nature experiences positively affect various facets of cognitive function, including memory and attention, impulse inhibition, mental performance, as well as imagination and creativity. Related to cog-

nition, nature experiences have been shown to reduce rumination (repetitive thoughts fixed on negative emotions) and subgenual prefrontal cortex activation (sgPFC), which are both common for those with BD (Apazoglou et al., 2019; Richardson et al., 2016). The sgPFC has been shown to display increased activity during sadness and the behavioral withdrawal and negative self-reflective processes that are tied to rumination. Furthermore, the stress reduction hypothesis posits that spending time in nature prompts a physiological response that reduces stress levels. In a report by Bratman et al. (2021), it was quoted by Frederick Olmsted that related to stress, "nature employs the mind without fatigue and yet exercises it; tranquilizes it and yet enlivens it; and thus, through the influence of the mind over the body, gives the effect of refreshing rest and reinvigoration to the whole system." (p. 124).

While the attention restoration theory embraces that, nature restocks one's cognitive stores, restoring the capacity to focus and one's ability to focus attention (Capaldi, et al., 2015). In a study of 60 participants diagnosed with BD, subjects were randomly assigned to a 50-minute walk in either a natural location (woodlands) or an urban location (along a road). Results revealed that individuals who hiked in nature experienced less anxiety, rumination, and negative affect, as well as greater positive emotions, and improved memory tasks, compared to those who walked in urban locations. Those who reported less rumination after the walk in the natural setting also showed an increase in subgenual prefrontal cortex activity. This region is typically deactivated in individuals with mood disorders (Bratman et al., 2015). In a study by Vidon (2019), remote and rural areas allow for alienation from everyday existence and allow for introspection and grounding. Meanwhile, Bichler and Peters (2021) confirmed that hiking represents a balanced and restorative way to experience nature. Their findings underline the importance of "relaxation" and the need to balance the benefits of hiking for physical and mental well-being. In Mau et al.'s (2021) systematic review of long-distance hiking and mental illness, seven studies explained the effect on well-being. The most common explanation focuses on the synergistic effect of the positive outcomes from hiking and exposure to nature, commonly referred to as "green exercise." The explanation is based on the view that exercising in nature has a restorative impact

on mental well-being. Furthermore, studies with the use of neuroimaging revealed that hiking in natural environments reduced neural activity in the brain that contributes to mental illness (Bratman et al., 2015). Notwithstanding, hiking is merely considered a balanced and mostly restorative way to experience nature (Rantala et al., 2018). In a review of literature by Bachler and Peters (2021) that focused on hiking in nature, it was revealed that this activity allowed for several dimensions of positive effect, including:

- Relaxation: To relax mentally and physically and to get away from it all.
- Recognition: To be recognized and known, and to show others that they have abilities.
- Imagination: To visualize novel places and scenery and to have an adventure (Ewert et al., 2013).
- Challenge: To increase abilities, knowledge, and new challenges.
- Creativity: To have an opportunity to be introspective and to allow imagination.
- Self-efficacy: To develop decision-making skills and to gain a sense of power (Pomfret & Bramwell, 2016)
- Satisfaction: To foster a sense of gratification.

Additionally, hiking experiences offer a component of physical activity that allows for varying levels, depending on the individual's desires.

Physical Activity

Physical activity, in general, contributes to the prevention and treatment of many mental health conditions (Vancampfort et al., 2017). The physical activity involved in hiking can yield advantageous results for those with BD, particularly if this increased activity becomes a regular practice. Consistent hiking (or distance walking) reduces the risk of heart disease, obesity, and diabetes, which is particularly relevant for individuals with BD (Felion & Marlo, 2022). Phillips (2017) points out that for individuals with BD, physical activity alters the progression of mood disorders by enhancing the levels of neurotrophic factors, beta-endorphins, neurotransmitters, and cortisol. Additionally, Kucyi et al. (2010) found that aerobic physical exercise is a promising treatment for neurocognitive dysfunction in

BD. Moreover, regular physical activity involvement improves bodily functions that include stress regulation, immune function, antioxidant resistance, circadian rhythm stabilization, and neurogenesis. In Melo's (2016) 18-month longitudinal study of those with BD, it was found that there is a connection between less physical activity and negative outcomes, including increased levels of anxiety, worsened functionality, elevations in severe insomnia, poorer functionality, and declines in body composition profile. Additionally, there were more negative mood-related episodes and psychiatric hospitalizations in those who were more physically inactive during this period. Proudfoot et al. (2012) also recognized an association between decreased physical exercise, depressive episodes, suicidality, and decreased quality of life.

Despite the myriad benefits of regular exercise, adults who are experiencing depressive symptoms, as is common in the cyclical nature of BD, have decreased exercise levels and are more likely than others to discontinue treatment regimens. As a rationale for this, it has been found that individuals with depressive symptoms report lower self-efficacy than those without depressive symptoms. Additionally, individuals with low self-efficacy tend to avoid challenges, discontinue strenuous activities more quickly, and are prone to increased stress (Bandura, 1977).

Exercise Self-efficacy

Knowledge of the benefits associated with physical activity among individuals with BD needs to be factored into the consideration of whether individuals will be motivated to begin involvement in an exercise pursuit (i.e., hiking). If they do, it is essential to consider whether it will be adopted and sustained for even greater physical and mental benefits. The concept of exercise self-efficacy comes into play. Self-efficacy is the belief and conviction that one can successfully perform a given activity, and it is central to behavior change as it guides what behaviors people choose to engage in and how people respond to obstacles and challenges in changing their behaviors. Self-efficacy beliefs rank among the strongest predictors for initiating and maintaining a physical activity (Warner et al., 2014; van Stralen et al., 2009). Furthermore, during exercise, individuals with a higher level of self-efficacy were found to exhibit a greater sense of energy, expend less effort, and experience more

positive feelings (*Medrano-Ureña, 2020)*. Bandura (1977) reported sources of self-efficacy, with the chief source being "mastery experience," which represents experiences where one has been successful in accomplishing a task in the past, and thus serves as a dependable indicator of one's ability to accomplish comparable tasks in the future. Therefore, prompting mastery experience in interventions is an effective way to increase self-efficacy beliefs for physical activity (Ashford et al., 2010). The other source is known as "vicarious experience," which refers to the act of witnessing others successfully accomplish a difficult task. Thirdly, "verbal persuasion" involves trying to convince someone of their ability to perform a task effectively. Lastly, "physiological and affective states" are the fourth source of self-efficacy. This concept is based on appraisal processes; for example, if negative affect, such as distress, occurs before a difficult task, it may be interpreted as feeling unprepared or vulnerable, which can compromise self-efficacy and performance. Conversely, positive affect might influence self-efficacy if interpreted as a sign of readiness and confidence in one's capabilities. As such, positive affect before a task is thought to activate memories of previous successes, thereby fostering self-efficacy beliefs (Bandura, 1997). In a study by Warner et al. (2014), exercise self-efficacy was significantly and positively related to mastery experience and self-persuasion, whereas negative affective states were negatively predicted by self-efficacy. Physical activity was significantly and positively predicted by self-efficacy, whereas vicarious experience and verbal persuasion by others were negatively related. With this in mind, we can more clearly perceive useful intervention techniques to facilitate the initiation and continuation of experiences, such as hiking, for individuals with BD. Since self-efficacy and subjective well-being are positively and significantly related, actions should be taken to increase the self-efficacy of individuals with BD, thereby improving their subjective well-being (Gupta, 2018). Additionally, it has been found that mindfulness predicts exercise self-efficacy (Neace et al., 2022).

Mindfulness While Hiking

The natural setting experienced during hiking easily facilitates mindfulness-based involvement, which has been proven helpful for individuals with BD (Williams et al., 2008). Either practiced independently or guided by someone in the hiking group, mindfulness

aims to heighten the capacity to keep one's attention on purpose in the present moment and reduce judgment of thoughts. Inherently, there is a necessity to be present with sustained and focused attention while hiking the path on a trail. Hiking allows for an increase in awareness of thought patterns, feelings, and bodily sensations. In a wilderness setting, bodily sensations may include the feel of a breeze, the smell of trees, the view of sunshine through the trees, or one's beating heart and breathing. Keng and colleagues (2011) reported that mindfulness practices have been clinically connected with improved psychological health, including subjective states of enhanced well-being, greater emotional reactivity, functional alterations, reduced symptoms of stress, and decreased rumination. Specific to those with BP, mindfulness promotes self-acceptance and improved regulation of negative thoughts (i.e., anxiety, guilt, shame, and rumination). It was also found that the management of self-referent information is often dysfunctional in those with BD. The cortical midline structures (CMS) play a fundamental role in both self-referential thinking and emotional processing/regulation, which is also shown to be compromised in individuals with BD. Mindfulness interventions target aberrant self-referential thinking, and neuroimaging studies indicate that mindfulness interventions impact both the structure and function of CMS (Marchand, 2012). Thus, mindfulness intervention likely exerts benefit by controlling CMS functions linked to both self-referential thinking and emotional regulation, which is necessary for those with BD.

Experience of "Awe"

In his book, Keltner discusses the "default-self" as a facet of our identity as people, specifically the component that encourages us to emphasize and "focus" on our unique qualities that differentiate us from others (2023, p. 33). The world, especially the United States, is becoming increasingly individualistic, and this selfishness/internal focus is spreading (Keltner, 2023, p. 33). This component of ourselves can become problematic if we allow it to control us and comprise our identity excessively, resulting in multiple undesired mental health struggles, one specifically being "rumination" (Keltner, 2023, p. 33). We find that this idea of the "default-self" and having too much emphasis in one's life is relevant to individuals with BD who are known to ruminate (Apazoglou et al., 2019; Keltner, 2023; Richardson et al.,

2016). Thus, we believe there to be immense potential in Keltner's idea of creating awe in the lives of those with BD to decrease this "default self" and increase the "small-self" to lead to a decrease in rumination (Keltner, 2023, p. 33, 34).

When one is hiking, particularly in remote areas, there are opportunities to experience profound emotions, often referred to as "awe." Awe is characterized by an appraisal of vastness and is reliably produced when individuals view scenes from nature (Shiota et al., 2007). Additionally, Ballew and Omoto (2018) found that the more absorbed one is with nature, the more likely they are to feel awe, with absorption functioning as a mediator in this relationship. Lopes et al. (2020) found that "walking in nature contributes" to more awe, and less negative emotions and rumination in comparison to "walking in a city" (p. 3). While not specifically focused on individuals with BD or mental illness, this result, combined with previous support for the benefits of hiking in nature, creates optimism for the positive outcomes that could ensue for BD populations specifically (Melo et al., 2016).

Awe is related to mental health; the emotion is linked to decreased activation of the dominant medial temporal gyrus, an area of the brain associated with fitting information into one's preexisting worldview, suggesting awe prompts individuals to consider novel perspectives (Guan et al., 2018). Preliminary evidence by Shurigar and Aegisdottir (2023) suggests exposure to awe leads individuals to restructure their thoughts about themselves, others, or the world. Additional support from Stellar and colleagues (2015) found that out of multiple positive emotions, individuals who noted feeling awe had fewer pro-inflammatory cytokines in their blood samples, suggesting decreased chemical stress and inflammation, which are known to increase the risk of individuals with BD entering a manic episode. Chirico and colleagues (2020) related awe to depression and noted that awe would act as a counterpart to the persistent self-referential process at the base of rumination and sense of hopelessness that is inherent in BD.

The above research supports the notion that exposing individuals with BD to experiences that create awe, such as hiking, could be beneficial in reducing their negative symptoms. One potential benefit of exposing individuals with BD to awe is that it may mini-

mize their "sense of self," making them more aware of things outside of themselves (Bai et al., 2017; Monroy & Keltner, 2023). Another potential outcome could be an increase in prosocial behavior among individuals with BD, a phenomenon that feeling awe has been found to facilitate (Monroy & Keltner, 2023; Piff et al., 2015). Both results would be tremendous for individuals with BD since those with this disorder often have challenges maintaining relationships due to the variability of their mood swings and fluctuating energy levels. We propose that hiking in groups could be beneficial to this specific population, as doing so would allow them each to feel awe, and as their "sense of self" decreases and their prosocial behaviors increase from this experience, they are likely to feel increased bonds with the other group members (Bai et al., 2017; Monroy & Keltner, 2023; Nelson-Coffey et al., 2019; Shiota et al., 2007; Van Cappellen & Saroglou, 2012; Yaden et al., 2019). Overall, positive outcomes that feelings of awe lead to, like detachment from oneself, may allow individuals with BD to overcome negative symptoms such as self-loathing, self-doubt, and distorted self-image, especially when there are feelings of guilt or blaming, which is common among those with this disorder.

Resiliency Improved

Hiking excursions allow for resiliency building. This may be particularly helpful for those with BD who have backgrounds that often involve destructive, chaotic, and guilt-ridden experiences. In a study by Choi et al. (2014), it was found that lower levels of resilience were related to higher levels of impulsive behaviors and increased amounts of episodes of depression in those with BD (Chuang et al., 2023). Additionally, previous studies revealed that higher levels of resiliency were associated with having a better quality of life for those with mental health disorders (Chuang et al., 2023; *Mizuno et al., 2016*; Post et al., 2018; Wartelsteiner et al., 2016). Other studies have shown that individuals with BD have lower levels of resiliency and quality of life compared to healthy controls (Chuang et al., 2023; Hofer et al., 2016, 2017). In a systematic review of articles by Chan and colleagues (2023), resilience was examined in participants with BD. It was found that higher resilience was associated with specific psychopathology that included less rumination, helplessness, aggression, and suicide attempts, as well as a lessened severity of depressive and psychotic symptoms. Additionally, more positive features

were seen that included less childhood trauma, more self-directed temperament, and better attitudes toward medication treatment. The findings regarding social factors included the presence of better support systems. Lastly, psychosocial functioning was found to be associated with better recovery, spiritual well-being, and quality of life. Furthermore, the study showed that resilience mediates depression, childhood trauma, and quality of life.

Hiking can build resilience by offering a challenging yet satisfying physical activity. When hiking, one may need to overcome discomforts and obstacles like weather and terrain, which allows for the development of adaptation, perseverance, and mental fortitude. One must often find solutions to problems if forward movement is to be attained. With the breadth of the challenges that hiking may bring and the need to tackle what lies ahead, a deep feeling of accomplishment and improvement in self-efficacy can result.

Application

The experience of hiking in nature can be viewed as a therapeutic approach, whether through solo or group experiences. Group programs of this nature have a reported success record for facilitating positive change, such as wilderness therapy, adventure-based therapy, and nature-based rehabilitation. Individual and group psychotherapy in a natural environment context has been reported to be less threatening and more natural compared with traditional treatment settings (Fernee et al., 2017). The social aspects of group treatment may be challenging for some individuals. Opportunities for cooperative activities, social support, and honest self-expression are suggested to enable pro-social processes. These processes include the acceptance of others, relationship development, and may allow trust building. One's capacity to develop relationships is likely to impact the treatment experience and outcome. Furthermore, the duration and context of the therapy may allow the necessary time and space to address and process emotional issues. Reports indicate that programs in the natural environment facilitate the uncovering of the personal problems that have not been previously revealed in more traditional treatment modalities (Fernee et al., 2017). The potential impact of this form of therapy is related to motivation, readiness for change, and timing, and, therefore, should be assessed initially.

After experiencing difficulties and turmoil in their lives, individuals with BD may find a sense of peace in the natural setting while hiking. Being situated in nature may initially feel like a shock to some individuals. However, this initial sense of bewilderment will likely gradually be replaced by self-confidence as one starts to manage this rather simplistic activity. Spending time in nature allows for reflection on life. The opportunity to reflect on life is suggested to be a key change agent that can add new perspectives on one's life and the struggles encountered due to an illness. Outcomes for those engaged in the hiking experience can be becoming physically stronger, experiencing an increase in perceived competence and a sense of accomplishment, and becoming more resilient. Over time, such experiences may provide more profound impacts, such as an increase in self-efficacy.

When asking oneself, do I try a hiking experience, or do I stay at home? One does not fully understand why hiking is worth it until we are on the trail and deprived of the comforts that are often taken for granted (i.e., easy access to clean water). One can have the opportunity to overcome obstacles and emerge with a feeling of achievement at the end of the journey while being enveloped in the magnificence of the natural environment. If you pursue hiking, you are likely going to be stepping outside of your comfort zone. One may feel fearful at first due to the challenges of doing something new, and there is the component of the unknown. With this and the physical demands of hiking, there is the potential to second-guess; however, if you recognize that enjoyment may come from merely being in the natural environment, anticipating a reward, and attaining it, you may see that a hiking excursion is worth the effort. A profound sense of fulfillment, achievement, and so much more can exceed the challenges that one may anticipate.

References

Antosik-Wojcinska, A. Z., Dominiak, M., Chojnacka, M., Kaczmarek-Majer, K., Opara, K. R., Radziszewska, W., Olwert, A., & Swiecicki, L. (2020). Smartphone as a monitoring tool for bipolar disorder: A systematic review including data analysis, machine learning algorithms and predictive modelling. *International Journal of Medical Informatics, 138,* 104131. https://doi.org/10.1016/j.ijmedinf.2020.104131

Apazoglou, K., Küng, A. L., & Cordera, P. et al. (2019). Rumination related activity in brain networks mediating attentional switching in euthymic bipolar patients. *International Journal of Bipolar Disorders, 7,* 3. https://doi.org/10.1186/s40345-018-0137-5

Ashford, S., Edmunds, J., & French, D. P. (2010). What is the best way to change self-efficacy to promote lifestyle and recreational physical activity? A systematic review with meta-analysis. *British Journal of Health Psychology, 15,* 265–288. https://doi.org/10.1348/135910709X461752

Bai, Y., Maruskin, L. A., Chen, S., Gordon, A. M., Stellar, J. E., McNeil, G. D., & Keltner, D. (2017). Awe, the diminished self, and collective engagement: Universals and cultural variations in the small self. *Journal of Personality and Social Psychology, 113*(2), 185–209.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215.

Bandura, A. (1999). *Self-efficacy in changing societies.* Cambridge University Press.

Bichler, B. F., & Peters, M. (2021). Soft adventure motivation: An exploratory study of hiking tourism. *Tourism Review, 76*(2), 473–488.

Bratman, G. N., Anderson, C. B., Berman, M. G., Cochran, B., De Vries, S., Flanders, J., Folke, C., Frumkin, H., Gross, J. J., & Daily, G. C. (2019). Nature and mental health: An ecosystem service perspective. *Science Advances, 5*(7), eaax0903. https://doi.org/10.1126/sciadv.aax0903

Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York Academy of Sciences, 1249*(1), 118–136. https://doi.org/10.1111/j.1749-6632.2011.06400.x

Bratman, G. N., Hamilton, J. P., Hahn, K. S., & Gross, J. J. (2015). Nature experience reduces rumination and subgenual prefrontal cortex activation. *Proceedings of the National Academy of Sciences, 112*(28), 8567–8572. https://doi.org/10.1073/pnas.1510459112

Capaldi, C. A., Passmore, H., Nisbet, E. K., Zelenski, J. M., & Dopko, R. L. (2015). Flourishing in nature: A review of the benefits of connecting with nature and its application as a wellbeing intervention. *International Journal of Wellbeing, 5*(4), 1–16. https://doi.org/10.5502/ijw.v5i4.449

Chan, M. K., Chew, Q. H., & Sim, K. (2023). Resilience in bipolar disorder and interrelationships with psychopathology, clinical features, psychosocial functioning, and mediational roles: A systematic review. *The Journal of Clinical Psychiatry, 84*(2), 22r14431. https://doi.org/10.4088/JCP.22r14431

Chirico, A. (2020). Awe. In *The Palgrave Encyclopedia of the Possible* (pp. 1–9). Springer International Publishing. https://doi.org/10.1007/978-3-319-98390-5_30-1

Choi, J. W., Cha, B., Jang, J., et al. (2015). Impulsivity in euthymic patients with bipolar disorder. *Journal of Affective Disorders, 170,* 172–177. https://doi.org/10.1016/j.jad.2014.08.056

Chuang, S. P., Wu, J. Y. W., & Wang, C. S. (2023). Resilience and quality of life in people with mental illness: A systematic review and meta-analysis. *Neuropsychiatric Disease and Treatment, 19,* 507–514. https://doi.org/10.2147/NDT.S392332

Ewert, A., Gilbertson, K., Luo, Y. C., & Voight, A. (2013). Beyond "because it's there." *Journal of Leisure Research, 45*(1), 91–111.

Felion, C. M., & Merlo, G. (2022). Mental health in lifestyle medicine. *Lifestyle Nursing,* 317–334.

Fernee, C. R., Gabrielsen, L. E., Andersen, A. J., & Mesel, T. (2017). Unpacking the black box of wilderness therapy: A realist synthesis. *Qualitative Health Research, 27*(1), 114–129.

Fletcher, J. S., & Banasik, J. L. (2001). Exercise self-efficacy. *Clinical Excellence for Nurse Practitioners, 5*(3), 134–143.

Frances, K. (2006). Outdoor recreation as an occupation to improve quality of life for people with enduring mental health problems. *British Journal of Occupational Therapy, 69*(4), 182–186.

Fulford, D., Johnson, S. L., & Carver, C. S. (2008). Commonalities and differences in characteristics of persons at risk for narcissism and mania. *Journal of Research in Personality, 42*(5), 1427–1438.

Gross, S., & Sand, M. (2019). Adventure tourism: A perspective paper. *Tourism Review, 75*(1), 153–157.

Guan, F., Xiang, Y., Chen, O., Wang, W., & Chen, J. (2018). Neural basis of dispositional awe. *Frontiers in Behavioral Neuroscience, 12,* 209. https://doi.org/10.3389/fnbeh.2018.00209

Gupta, S., & Kumari, L. (2018). A study of instrumental activities of daily living of patients having bipolar affective disorder and its relationship with their subjective well-being and self-efficacy. *Bipolar Disorder, 4*(120), 2472–1077.

Han, H., Lho, L. H., Al-Ansi, A., & Yu, J. (2020). Cycling tourism: A perspective article. *Tourism Review, 75*(1), 162–164.

Hofer, A., Mizuno, Y., & Frajo-Apor, B. (2016). Resilience, internalized stigma, self-esteem, and hopelessness among people with schizophrenia: Cultural comparison in Austria and Japan. *Schizophrenia Research, 171,* 86–91. https://doi.org/10.1016/j.schres.2016.01.027

Hofer, A., Mizuno, Y., Wartelsteiner, F., et al. (2017). Quality of life in schizophrenia and bipolar disorder: The impact of symptomatic remission and resilience. *European Psychiatry, 46,* 42–47. https://doi.org/10.1016/j.eurpsy.2017.08.005

Kangas, J. L., Baldwin, A. S., Rosenfield, D., Smits, J. A., & Rethorst, C. D. (2015). Examining the moderating effect of depressive symptoms on the relation between exercise and self-efficacy during the initiation of regular exercise. *Health Psychology, 34*(5), 556–564.

Keltner, D. (2023). *Awe: The new science of everyday wonder and how it can transform your life.* Penguin Press.

Keltner, D., & Haidt, J. (2003). Approaching awe, a moral, spiritual, and aesthetic emotion. *Cognition and Emotion, 17*(2), 297–314. https://doi.org/10.1080/02699930244000318

Keng, S., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review, 31*(6), 1041–1056. https://doi.org/10.1016/j.cpr.2011.04.006

Kucyi, A., Alsuwaidan, M. T., Liauw, S. S., & McIntyre, R. S. (2010). Aerobic physical exercise as a possible treatment for neurocognitive dysfunction in bipolar disorder. *Postgraduate Medicine, 122*(6), 107–116.

Lopes, S., Lima, M., & Silva, K. (2020). Nature can get it out of your mind: The rumination-reducing effects of contact with nature and the mediating role of awe and mood. *Journal of Environmental Psychology, 71,* 101489.

Marchand, W. R. (2012). Self-referential thinking, suicide, and function of the cortical midline structures and striatum in mood disorders: Possible implications for treatment studies of mindfulness-based interventions for bipolar depression. *Depression Research and Treatment,* 2012, Article 246725. https://doi.org/10.1155/2012/246725

Marzani, G., & Price, N. A. (2021). Bipolar disorders: Evaluation and treatment. *American Family Physician, 103*(4), 227–239.

Mau, M., Aaby, A., Klausen, S. H., & Roessler, K. K. (2021). Are long-distance walks therapeutic? A systematic scoping review of the conceptualization of long-distance walking and its relation to mental health. *International Journal of Environmental Research and Public Health, 18*(15), 7741.

Medrano-Ureña, M., Ortega-Ruiz, R., & Benítez-Sillero, J. (2020). Physical fitness, exercise self-efficacy, and quality of life in adulthood: A systematic review. *International Journal of Environmental Research and Public Health, 17,* 6343. https://doi.org/10.3390/ijerph17176343

Melo, M. C., Daher, E. F., Albuquerque, S. G., & de Bruin, V. M. (2016). Exercise in bipolar patients: A systematic review. *Journal of Affective Disorders, 198,* 32–38. https://doi.org/10.1016/j.jad.2016.03.004

Mental Health America. (2023). *Bipolar disorder.* https://mhanational.org/conditions/bipolar-disorder

Mizuno, Y., Hofer, A., Suzuki, T., et al. (2016). Clinical and biological correlates of resilience in patients with schizophrenia and bipolar disorder: A cross-sectional study. *Schizophrenia Research, 175,* 148–153. https://doi.org/10.1016/j.schres.2016.04.047

Monroy, M., & Keltner, D. (2023). Awe as a pathway to mental and physical health. *Perspectives on Psychological Science, 18*(2), 309–320.

Neace, S. M., Hicks, A. M., DeCaro, M. S., & Salmon, P. G. (2022). Trait mindfulness and intrinsic exercise motivation uniquely contribute to exercise self-efficacy. *Journal of American College Health, 70*(1), 13–17.

Nelson-Coffey, K. S., Ruberton, P. M., Chancellor, J., Cornick, J. E., Blascovich, J., & Lyubomirsky, S. (2019). The proximal experience of awe. *PLOS ONE, 14*(5), e0216780. https://doi.org/10.1371/journal.pone.0216780

Nierenberg, A. A., Agustini, B., Köhler-Forsberg, O., Cusin, C., Katz, D., Sylvia, L. G., & Berk, M. (2023). Diagnosis and treatment of bipolar disorder: A review. *JAMA, 330*(14), 1370–1380.

Phillips, C. (2017). Physical activity modulates common neuroplasticity substrates in major depressive and bipolar disorder. *Neural Plasticity, 2017,* Article 7014146.

Piff, P. K., Dietze, P., Feinberg, M., Stancato, D. M., & Keltner, D. (2015). Awe, the small self, and prosocial behavior. *Journal of Personality and Social Psychology, 108*(6), 883–899.

Pomfret, G., & Bramwell, B. (2016). The characteristics and motivational decisions of outdoor adventure tourists: A review and analysis. *Current Issues in Tourism, 19*(14), 1447–1478.

Proudfoot, J., Parker, G., Manicavasagar, V., Hadzi-Pavlovic, D., Whitton, A., Nicholas, J., & Burckhardt, R. (2012). Effects of adjunctive peer support on perceptions of illness control and understanding in an online psychoeducation program for bipolar disorder: A randomised controlled trial. *Journal of Affective Disorders, 142*(1–3), 98–105.

Rantala, O., Hallikainen, V., Ilola, H., & Tuulentie, S. (2018). The softening of adventure tourism. *Scandinavian Journal of Hospitality and Tourism, 18*(4), 343–361.

Richardson, M., McEwan, K., Maratos, F., & Sheffield, D. (2016). Joy and calm: How an evolutionary functional model of affect regulation informs positive emotions in nature. *Evolutionary Psychological Science, 2,* 308–320. https://doi.org/10.1007/s40806-016-0065-5

Selhub, E. M., & Logan, A. C. (2012). *Your brain on nature.* John Wiley & Sons Canada.

Shiota, M. N., Keltner, D., & Mossman, A. (2007). The nature of awe: Elicitors, appraisals, and effects on self-concept. *Cognition and Emotion, 21*(5), 944–963.

Shurigar, B., & Aegisdottir, S. (2023). The role of awe in cognitive restructuring, cognitive reflection, and set shifting: A psychotherapy analogue study [Unpublished doctoral dissertation]. Ball State University.

Stellar, J. E., John-Henderson, N., Anderson, C. L., Gordon, A. M., McNeil, G. D., & Keltner, D. (2015). Positive affect and markers of inflammation: Discrete positive emotions predict lower levels of inflammatory cytokines. *Emotion, 15*(2), 129–133. https://doi.org/10.1037/emo0000033

Tharp, J. A., Johnson, S. L., & Sinclair, S. (2016). Goals in bipolar I disorder: Big dreams predict more mania. *Motivation and Emotion, 40,* 290–299. https://doi.org/10.1007/s11031-015-9519-5

Tian, H., Zhou, W., Qiu, Y., & Zou, Z. (2022). The role of recreation specialization and self-efficacy on life satisfaction: The mediating effect of flow experience. *International Journal of Environmental Research and Public Health, 19*(6), 3243. https://doi.org/10.3390/ijerph19063243

Ünal, G. Ö., Aktaş, G. Ç., İşcan, G., & Atay, İ. (2022). Investigation of the relationship between illness perception and clinical characteristics, coping, self-efficacy in cases diagnosed with bipolar disorder. *Medical Journal of Süleyman Demirel University, 29*(3), 356–366.

Van Cappellen, P., & Saroglou, V. (2012). Awe activates religious and spiritual feelings and behavioral intentions. *Psychology of Religion and Spirituality, 4*(3), 223–236.

Vancampfort, D., Van Damme, T., Probst, M., Firth, J., Stubbs, B., Basangwa, D., & Mugisha, J. (2017). Physical activity is associated with the physical, psychological, social, and environmental quality of life in people with mental health problems in a low-resource setting. *Psychiatry Research, 258,* 250–254.

van Stralen, M. M., De Vries, H., Mudde, A. N., Bolman, C., & Lechner, L. (2009). Determinants of initiation and maintenance of physical activity among older adults: A literature review. *Health Psychology Review, 3,* 147–207. https://doi.org/10.1080/17437190903229462

Vidon, E. S. (2019). Why wilderness? Alienation, authenticity, and nature. *Tourist Studies, 19*(1), 3–22.

Warner, L. M., Schüz, B., Wolff, J. K., Parschau, L., Wurm, S., & Schwarzer, R. (2014). *Sources of self-efficacy for physical activity. Health Psychology, 33*(11), 1298–1308. https://doi.org/10.1037/hea0000085

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