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An Examination of Meaningful Experiences During Sport Education

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Abstract

Background: In recent research years, there has been an increasing focus on the meaningfulness of physical education experiences. While it has been suggested that certain curriculum models such as sport education or cooperative learning provide opportunities for meaningful engagement in physical education, to date there has been no empirical study of those claims.

Objectives: The purpose of this study was to quantitatively examine students' perceptions of meaningfulness in two physical education contexts: traditional multi-activity format, and sport education.

Methods: Sixty seventh-grade students aged 12 to 14 completed a 20-item survey titled "Meaningful Experiences in Physical Education Survey (MEPES)" prior to and at the completion of one of three sport education seasons. The analysis consisted of independent samples *t*-test comparisons between the two contexts (previous physical education experiences, and sport education) for each of the five dimensions of meaningfulness. A Pearson correlation was conducted to examine if there were significant relationships between the five dimensions.

Results: Results of the independent samples *t*-test showed that significantly higher levels of meaningfulness were identified from participation in sport education than in previous physical education for four of the five dimensions. Pearson's coefficient results indicated significant positive correlations between all five meaningfulness dimensions.

Conclusion: Sport education has structural elements that promote a sense of meaningfulness within physical education.

Keywords: physical education, sport education, meaningfulness.

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INTRODUCTION

In 1994, Daryl Siedentop developed the sport education model to provide more authentic and meaningful experiences for girls and boys in the context of school physical education (Siedentop, 2002). In the decades since the first trials of sport education, extensive evidence has shown that the model's effectiveness in producing competent, literature and enthusiastic sports players is unaffected by location, sport content, and sport culture (Bessa et al, 2021; Hastie & Wallhead, 2016). For example, within Indonesia, the model has had a positive impact on students' motivation (Ramadhan & Effendy, 2021), game performance and leadership (Slamet et al, 2021), as well as promotion a more goal-oriented approach to sport (Ginanjar et al., 2023).

A central element of sport education is the idea of meaningfulness. In the past decade, there has been a great deal of attention to this concept within the field of physical education. In a ground-breaking paper, Beni et al. (2017) reviewed over 50 articles on what young people find meaningful in physical education. Guided by the earlier work of Kretchmar (2007, 2008), it was concluded that meaningful physical education experiences should incorporate the following features: (i) social interaction (opportunities for students to interact and collaborate with their peers, teachers, and other individuals within the community), (ii) challenge (tasks that are appropriate for their skill level, leading to a sense of accomplishment and self-confidence), (iii) fun (enjoyable and engaging experiences that promote a positive attitude towards physical activity), (iv) motor competence, and (v) personally relevant learning (tasks are designed to allow students to develop a sense of autonomy and self-direction). These ideas have been field tested with teachers in schools (Beni et al., 2019; 2023) and within programs of teacher education (Fletcher et al., 2020; Ní Chróinín et al., 2019), and there is now a robust support for these key concepts.

What is missing in the meaningfulness literature are studies of the various instructional models (Metzler, 2017). This is notable given that the features of many of these models intuitively should promote the elements of meaningfulness promoted by Fletcher et al. (2021). Sport education for example, includes extended periods of engagement with the activity, ongoing team affiliation, formal competition, record keeping, festivity, and a culminating event that should align well with the ideas of social interaction, fun and motor competence. Indeed, research on the model has shown the following outcomes in these regards.

Rodríguez Macías et al. (2021) found that reported that the use of sport education in physical education significantly promoted enjoyment and fun. Farias et al. (2019) reported increasing game performance development of invasion games in consecutive tactically focused sport education seasons, while Araújo et al. (2019) found similar results in volleyball during sport education. Wallhead et al. (2013a) found that extended experiences in sport education helped to develop students' social bonds and promoted close social relationships and having fun with others. In addition, Wallhead and Ntoumanis (2004) showed increases in students' perceptions of optimal challenge during lessons using the model.

In light of these findings, the purpose of this study was to quantitatively examine students' perceptions of meaningfulness in two physical education contexts: the traditional multi-activity format, and sport education. It was hypothesized that students would report higher levels of meaningfulness in all five dimensions following sport education than they do in their regular physical education classes. Two research questions guided this study: (1) Does sport education have a positive effect on promoting meaningful PE experiences among seventh-grade students? (2) Is there a relationship between the five dimensions of meaningful PE (social interaction, challenge, fun, motor competence, and personally relevant learning)?

METHOD

Study Design and Participants

A quasi-experimental, within-subjects pretest-posttest design was employed in this study. The participants were 60 seventh-grade students, aged 12 to 14 years old (M = 12.67, SD = 0.55), from a middle school in the south-east of the United States. Of those participants, 51.67% were males (31 of 60), 46.67% were females (28 of 60), and 1.67% did not specify (1 of 60). A total of 56.67% identified themselves as Caucasian, 18.33% as Black/African, 13.33% as Hispanic/Latino, 13.33% as Asian, 1.67% as Native American, 1.67% as Pacific Islander, 3.33% as other, and 5% as preferring not to answer. With over than 700 students enrolled, the school has a spacious indoor gym, ample outdoor play areas, and a sufficient supply of equipment to ensure that each student has their own piece of equipment for skill-based and sport education lessons.

The students participated in physical education each day for a period of one hour. Many of the students had previous experience with sport education either in the first semester of the school year or in their primary education years.

The teachers consisted of one doctoral student and two final year undergraduate students. All had previous teaching experience with sport education, with two having successfully taught their sports (speedball and coneball) at this same school. All three met daily with the project leader and the first author to consolidate findings and adjust the season plan if necessary. The study reported in the manuscript was conducted in accordance with the ethical standards of the Declaration of Helsinki and that participants signed a consent form.

Seasons. All students participated in one of three, fourteen lesson seasons across a three-week span. The sports were all highly active invasion games involving passing and catching (from foot or hand) and shooting into a goal or over a line. The sports were speedball, coneball, and 3 vs. 3 basketball and the students had the choice of which sport to select. All seasons involved a three-phase format: skill and tactical development, team games with practices, and a short postseason. Instruction included direct instruction by the teacher as well as cooperative and peer learning.

Model fidelity. Model fidelity was ensured in three ways. First, the project leader wrote the season plans for each of the units. These ensured that the content across the sports progressed at a similar rate, involved the same roles, had the same league scoring system (points for fair play, team preparation, officiating and win/loss), and followed a similar format for the post season. Second, the project leader and first author were present each day during the seasons, and recorded the extent to which the implantation of the lessons matched the planned activities. Only minor deviations due to weather or student absences were evident. Third, each teacher had full access to the space, sports equipment, and any other resources (scoresheets, report forms, etc.) they needed to fully enact the season.

Research Instruments

Prior to the sport education seasons, all students completed a 20-item survey titled "Meaningful Experiences in Physical Education Survey (MEPES)" developed by the authors. The survey was found to be valid and reliable. The MEPES was designed to measure students' experiences of meaningful physical education and had items related to

the five categories of meaningfulness (social interaction, challenge, fun, motor competence, and personally relevant learning) listed by Fletcher et al. (2021). The MEPES also recorded the students' demographic data (age, sex, and ethnicity). The pre- and post-sport education surveys were filled out by students and administered by the research authors during the first part of PE class time. The pre-sport education surveys took place three days before the season kicked off. Three days following the culminating events of the SE seasons, the students completed the same survey, but the prompt was to make it specifically related to their participation in sport education.

All items were preceded by the stem "In my physical education (PE) lessons, . . ." and responses were provided on a 5-point Likert scale (1 = strongly disagree, and 5 = strongly agree). Each of the subscales consisted of four items for social interaction (α = .86; example item "I am able to have positive interactions with my teachers"), challenge (α = .81; example item "I am able to choose the difficulty level of the tasks"), fun (α = .76; example item "I find the activities enjoyable"), motor competence (α = .87; example item "I learn the skills necessary to play successfully"), and personally relevant learning (α = .89; example item "I connect what I am learning to my life beyond the gym").

Data Analysis

Given that the surveys were anonymous, an independent-samples *t*-test using IBM SPSS Statistics (version 29) was run to determine if there were differences in the five meaningfulness dimensions for traditional physical education and the sport education seasons. Pearson correlation was conducted to examine the state of the relationships between the five dimensions of meaningfulness.

RESULTS AND DISCUSSION

Figure 1 presents the students' scores for the five meaningfulness dimensions across the two conditions. It can be seen that participation in sport education was significantly more meaningful to the students than their previous experiences with physical education at this school. Results of an independent samples *t*-test indicated statistically significant increases at the .05 level between pre- and post-sport education average scores across all meaningfulness variables except for challenge. Social interaction average score increased from 4.17 (SD = 0.70) to 4.45 (SD = 0.58), $t_{(116)}$= 2.39, p = .009, d = .44; fun average score increased from 3.90 (SD = 0.78) to 4.33 (SD = 0.64), $t_{(116)}$ = 3.31, p = <.001, d = .61; motor

competence average score increased from 4.05 (*SD* = 0.77) to 4.35 (*SD* = 0.69), $t_{(116)}$ = 2.24, p = .014, d = .41; and personally relevant learning average score increased from 4.00 (*SD* = 0.73) to 4.30 (*SD* = 0.80), $t_{(116)}$= 2.14, p = .017, d = .40. Only a slight improvement was found in the challenge variable with non-significant difference between the pre-and post-sport education average scores of 4.05 (*SD* = 0.61) to 4.22 (*SD* = 0.71), $t_{(116)}$ = 1.36, p = .088, d = .25.

A Pearson correlation coefficient was computed to determine the relationship between the five variables of meaningfulness. As shown in Table 1, significant positive relationships were found across all variables at the .001 level.

Table 1. Correlations Between the Five Dimensions of Meaningfulness

Variables	1	2	3	4	5
1. Social interaction	1				
2. Challenge	.614***	1			
3. Fun	.770***	.760***	1		
4. Motor competence	.705***	.852***	.748***	1	
5. Personally relevant learning	.683***	.819***	.846***	.808***	1

Note. ***Correlation is significant at the .001 level (2-tailed).

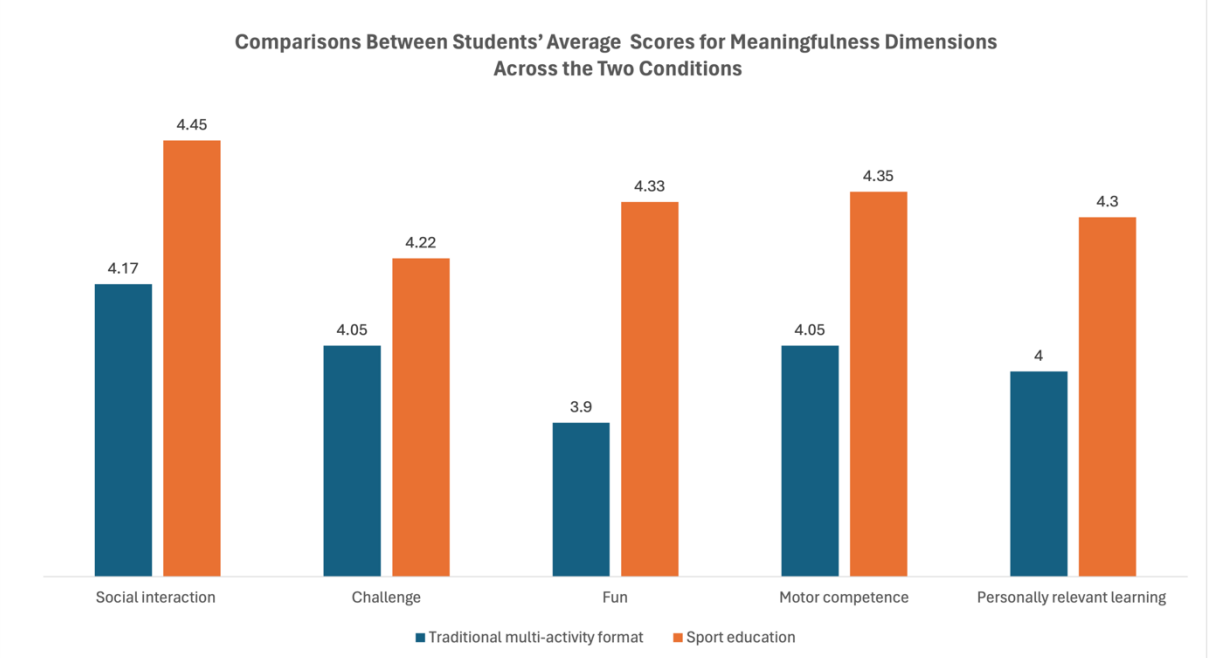

Figure 1. Comparisons between students' average scores from the MEPE survey across time

DISCUSSION

The purpose of this study was to examine differences in students' conceptions of meaningful experiences in their regular physical education and their participation in a season of sport education. Reports from the students revealed that in all cases, the conduct of sport education provided statistically higher levels of meaning than previous participation. This is a valuable outcome given that in sport education, the goal is for students to "want to participate because they have come to value the experiences and enjoyment derived from participation" (Siedentop et al., 2011). Having fun and feeling appropriately challenged in a relevant learning environment are all aspects that promote this enjoyment. The comparison between the two conditions is further evidence that all students find sport education more enjoyable than a direct instruction approach (Wallhead et al., 2013b) as the model moves students of all motivations toward along the self-determined continuum. Indeed, in a recent multilevel meta-analysis, Manninen and Campbell (2022) found that sport education is on average "more need-supportive and promotes intrinsic motivation and prosocial attitudes when compared to other widely used PE instructional styles, namely direct instruction, the skill-drill game approach, and the "traditional style" of teaching."

Research on competence in sport education has shown greater improvements for students in sport education over traditional units (Hastie & Wallhead, 2016). In this study, this idea is replicated with a significant effect size. Again, these results from students' perceptions align with many of the studies by Manninen and Campbell (2022) reporting large effect sizes indicated significant practical significance.

The authors responsible for the original framing of the idea of meaningfulness in physical education suggested that pedagogical model such as sport education or teaching for personal and social responsibility as well as a cooperative learning are all student-centered models that offer opportunities and learning experiences that are fun and support positive social interaction and affiliation (Beni, Fletcher, & Ní Chróinín 2019). Nevertheless, these authors content that these models promote meaningful experiences in "convenient" rather than explicit ways (Beni, Ní Chróinín, & Fletcher, 2019). They suggest that meaning in sport education is secondary to the specific outcomes (in sport education) of the development of the competent, literate and enthusiastic sports player. However, what these authors fail to recognize is that sport education was designed to provide an

"authentic sport experience", one which indeed was grounded in the idea that participation in sport and games in schools should mirror the activities that they would participate in out of school settings (Siedentop et al, 2020). Clearly, there is a corollary between authenticity and relevance, which is one of the five meaningfulness. In fact, Beni, Chróinín, & Fletcher (2019) found that when the teacher announced she would not keep score during competitions there was significant resistance from students who could not find meaning in situations without a clear-cut winner and loser, resulting in students even questioning the purpose of creating teams and promoting aspects of team affiliation.

This small scenario above shows the importance of student voice in research that is exploring meaningfulness. As evident in this study, we have shown significant increases and high levels of perceived meaningfulness from participation in sport education. The scores in Figure 1 and Table 1 show all the elements should be considered explicit rather than convenient outcomes of the model. It should not be underestimated that this study was the first to attempt to quantify meaningfulness using the voices of students, whereas in the over 40 publications presented in the previous work on meaningfulness, students have in effect been silenced. In those studies, the focus has been on the experiences of the teacher, of the pedagogies necessary to promote meaningfulness, and the ability to teach teachers and pre-service teachers how to enact meaningful experiences. While it is acknowledged that the survey used in this study was not subject to a complete factor analysis with respect to the constructs developed, there were still high levels of reliability throughout the survey.

CONCLUSION

In conclusion, this study provides evidence for using the opinions of students in terms of whether their learning experiences in physical education produce high levels of meaningfulness. Further, the analysis of the data reveals that when students specifically participate in a season of sport education, meaningfulness is enhanced. The next stage in this examination of meaning would be to extend the data collection methods beyond surveys to include aspects of student voice such as storytelling, drawing, photo-elicitation, and interviews. In essence, a phenomenological approach to understanding meaning in sport education is particularly warranted.

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CONFLICT OF INTEREST

The authors hereby declares that this research is free from conflicts of interest with any party.

AUTHOR'S CONTRIBUTION

Alshuraymi contributed to the preparation of the methods, in collecting and analyzing the data, and presenting the results. Hastie contributed to the design of the seasons plans, supervising the sport education intervention, as well as interpreting and drawing conclusions.

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