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Cook Islands Students' Attitudes towards Physical Education

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Abstract: Teacher education has the potential to bring changes within educational systems that can shape the knowledge and skills of future generations. Teaching in a culturally responsive manner is an important part of developing teachers to serve as key change agents in transforming education and society through research, from the perspectives of student learning and achievement in health and physical education. It was expected in this study that students' recognition of cultural activities could inspire them to engage in physical education. The aim of the study was to examine student awareness of teaching that included cultural activities, with an emphasis on Cook Islands traditional cultural values. One hundred and one students and three teachers from three different schools participated in the study. Only 5% of the student population were non-Cook Islanders. A quantitative methodology was used to analyse the results and findings of the data using an initial Exploratory Factorial Analysis (EFA) and then group comparisons. The implications of identifying Cook Islands cultural values in the curriculum of physical education and what this means for teacher education are discussed.

Introduction

Teacher education explores ways to improve the general educational background of trainee teachers; increasing their knowledge and understanding of the subjects they are to teach; of pedagogy and understanding of children and learning; and the development of practical skills and competencies (Perraton, 2010). This paper investigated the quantitative component of a larger study that explored student insight into teaching, including the influence of traditional Cook Islands cultural values. The study considered how physical education teachers used a culturally responsive pedagogy in teaching to influence student participation and enjoyment in physical education. This encouraged physical education teachers to become confident as change agents in teaching culturally responsive pedagogy. Researchers, including Cheypator-Thomson (1994), Ladson-Billings (1995), and Thaman (2003), have previously examined the notion of employing culturally responsive pedagogy in teaching in order to enhance student learning and classroom participation. Building on this finding, the research questions for this study were: 'What are students' perceptions of teaching which includes cultural activities and has an emphasis on Cook Islands traditional values? Could the inclusion of cultural activities influence student learning, participation, and enjoyment in physical education?' It was expected that students' learning of culture would be associated with an appreciation of the cultural activities. This study contributes to an understanding of the teaching of Cook Islands core values in physical education could be

linked to students' attitudes and enjoyment in health and physical education. The benefits of employing culturally appropriate activities in teacher education physical education programmes is discussed.

Research Design

Participants

One hundred and one students and teachers from three different schools participated in the study. Only 5% of the student population were non-Cook Islanders. Demographic details of the students in the three schools can be found in Table 1. This table includes the total number of students who completed the survey questionnaires, and the total number of boys and girls by school and year level. Students and parents provided consent to participation in the study by signing an information and consent form. In order to ensure the confidentiality of the participating schools, the pseudonyms 'NC', 'TC' and 'PC' are used throughout the manuscript.

School and year level	NC Year 9/10	TC Year 9/10	PC Year 9/10 combined
Boys	21	23	9
Girls	19	20	9
Total	40	43	18

Table 1: Students in study by gender and school

Procedure

The individual student responses were collected in questionnaires and then entered into the SPSS software, which stored the entries in a database. Once all entries had been completed, they were checked by the researcher and any errors were corrected. The major analyses in this study involved an initial Exploratory Factorial Analysis (EFA). In order to identify the underlying structure of the items for the student questionnaires, an exploratory series of maximum likelihood factor analyses with oblimin rotation and Kaiser Normalisation were conducted. For a statement to be retained, it had to have a loading of $>.025$, although it was decided that items close to $>.025$, which added a different aspect to the factor, would also be retained. Furthermore, in order to allow a comparison of responses of students in subsequent analyses, it was decided that only items that indicated similar fits with the student questionnaires would be retained. These parameters resulted in the inclusion of all items from the original questionnaire. Once the factor structure had been confirmed, differences in student groups' perceptions of culturally responsive teaching in physical education were analysed using analyses of variance (ANOVA) and paired sample *t*-tests.

Methodology

Survey Questionnaires

In September 2007, 101 Year 9 and Year 10 students were invited to complete questionnaires which asked them to rate their perceptions of teaching that included cultural activities and that had an emphasis on Cook Islands traditional cultural values. They did this after the first author had taken a series of four lessons with them that included cultural

activities. Of the students, 101 agreed to participate in the study. A 1–5 Likert scale was used for surveying the students’ perceptions of culturally responsive teaching in physical education where 1 = *strongly agree*, 2 = *agree*, 3 = *neither agree nor disagree*, 4 = *disagree* and 5 = *strongly disagree*. Of particular interest in the study were the students’ perceptions of cultural activities, which were being taught with an emphasis on Cook Islands traditional cultural values. Table 2 contains the questionnaire items.

Open Questions

The questionnaires also contained open questions to which students were asked to respond. In students’ responses on the 1–5 scale, they were asked to explain why they had chosen that particular response. The students’ perceptions of the inclusion of cultural activities in physical education were of particular interest in the study; however, student perceptions of cultural values, family values, personal values, community values, health, and physical fitness were also of interest. However, student qualitative responses are not included in the current study.

1. Physical education is an important part of the curriculum at my school.	11. I enjoy running 2 kilometres as part of my physical education classes.
2. I enjoy participating in physical education at my school.	12. Taking part in physical education is fun and enjoyable.
3. Participation in physical education at my school is important to me.	13. My family thinks that taking part in physical education is important.
4. Taking part in physical education classes helps me to improve my physical skills.	14. My family thinks that physical education is an important part of the curriculum.
5. I like taking part in physical education classes because it helps me to learn new skills.	15. My family believes that culture is one of the ways that can help us learn better in school.
6. My community encourages me to participate in physical education at my school.	16. When I take part in cultural activities at my school, I get excited and happy.
7. I enjoy taking part in various cultural activities such as traditional sports and games, arts and crafts, and weaving.	17. I would enjoy physical education classes more if cultural activities were also included.
8. Participating in various cultural community activities such as traditional sports and games, dancing, and weaving is an important part of my physical education programme at school.	18. My culture should be an important part of the teaching programme of health and physical education.
9. I enjoy participating in the cultural activities of my village such as traditional sports and games, dancing, and arts and crafts because it helps me to improve my learning of my culture.	19. I have enjoyed the cultural activities that have been included in physical education lessons.
10. I enjoy showing my culture to others at school.	20. I enjoyed physical education more last year when no cultural activities were included.

Table 2: Questionnaire items

Findings

Quantitative Analysis

An exploratory factor analysis (EFA), as explained above, led to the identification of three factors, namely: family physical education, cultural physical education, and personal physical education. Table 3 lists the statements and their factor loadings. Items with factor loadings above .3 were regarded as contributing to a particular factor. There were no items that cross-loaded. That is, no items had values above .3 and related to two different factors. As a result, three distinct factors could be identified. Items related to each factor are in bold

in the table below, for ease of reader identification. The factor correlation matrix at the end of Table 3 shows that there was no col-linearity. In other words, this matrix shows that because the correlations between factors are low that each factor was measuring separate ideas.

Factors	Statements	Factor loadings		
		1	2	3
Factor 1	Family physical education			
Q14	Family thinks PE important to curriculum	.97	.13	.02
Q13	PE important to my family	.44	.04	.24
Factor 2	Cultural physical education			
Q17	Enjoy more if cultural activities used in PE	-.01	.81	.05
Q16	Cultural activities exciting	-.05	.63	.20
Q7	I enjoy cultural activities	-.13	.60	.15
Q18	Culture important to teaching PE	.14	.60	.05
Q20	Enjoy PE last year no culture included (reverse scored)	-.16	.56	-.16
Q9	I enjoy cultural activities to learn culture	.13	.60	.17
Q8	Cultural activities important	.18	.48	-.02
Q10	I enjoy showing my culture	.28	.45	-.06
Q15	Family believes culture helps learning	.03	.42	-.15
Factor 3	Personal physical education			
Q2	I enjoy participating in PE	.11	-.15	.76
Q3	Participation in PE important to me	.20	-.11	.63
Q12	PE is fun	-.01	-.06	.61
Q4	PE helps improve my physical skills	.06	.06	.59
Q19	I enjoy culture part of PE	-.10	.22	.56
Q1	PE important part of curriculum in my school	.08	.11	.47
Q5	I like PE new skills	-.10	.04	.46
Q6	Community encourages PE	.11	.04	.41
Q11	I enjoy 2km run	-.09	.09	.37
Factor correlation matrix		1	2	3
1. Family PE			.15	.29
2. Cultural PE		.15		.36
3. Personal PE		.9	.36	

Table 3: Three factors and correlations relating to family physical education, cultural physical education and personal physical education

The means (*M*) and standard deviations (*SD*) for each factor, across the sample of 101 students, were explored next. In relation to each factor, the means and standard deviations were as follows: Family physical education, $M = 2.20$ ($SD = .88$), Cultural physical education $M = 2.53$ ($SD = .65$), Personal physical education $M = 2.09$ ($SD = .59$). The lower the mean, the stronger the agreement with the questionnaire statements. Therefore, for all factors, students showed strong endorsement of the ideas presented.

The means indicated that students personally valued physical education to a greater extent than they believed their families valued physical education. Because the standard deviations were small, this suggested that most student responses were clustered towards the mean, although scores were obtained across the full range for all factors. Overall, there was a greater variation of student response on the family and cultural scales than there was on the personal scale.

Differences between the means for the family, personal, and cultural physical education factors were explored using paired sample *t*-tests. In order to control the type 1 error rate across the three tests, the Bonferroni correction method was used, so the *p* value was set at .015. When the means for the family and cultural factors were compared, a statistically significant difference was found, $t(100) = -3.928$, $p < .001$. This showed that students believed their families valued physical education more than they valued cultural activities being included into their physical education programme. Further, there was also a

statistically significant difference between the means for the cultural and personal factors. Again, students valued physical education at a personal level more than they valued the inclusion of cultural activities within their physical education programme. The difference between perceptions of family and personal valuing of physical education was not statistically significant.

Means for personal, cultural and family factors were examined by year level using a one-way ANOVA. As is shown in Table 4, students in both Years 9 and 10 most strongly endorsed personal valuing of physical education. As highlighted in Table 4, the means for Year 9 pupils reflect greater negativity than those for Year 10 pupils in relation to their perception of their families' valuing of physical education, personal attitudes towards physical education, and the valuing of the inclusion of cultural activities in physical education. However, there were no statistically significant differences found between Year 9 and Year 10 students' perceptions of family valuing of physical education, $F(1, 100) = .22, p < .64$, student valuing of cultural activities in physical education, $F(1, 100) = 2.33, p < .13$, and personal attitudes of students towards physical education, $F(1, 100) = 1.09, p < .30$.

The means were then examined by gender for all students. In Table 4, the means for males were more negative in relation to their perceptions of their families' valuing of physical education, cultural physical education, and personal attitudes towards physical education than were the means for females.

A one-way ANOVA was used to explore any statistically significant differences between the means by gender for all students. There were no statistically significant differences found between the male and female students' personal attitudes towards physical education, $F(1,100) = 1.45, p < .23$. However, there was a statistically significant difference between males and females in their perceptions of family valuing of physical education, $F(1,100) = 5.26, p < .02$ and for students' valuing of cultural activities in physical education, $F(1,100) = 11.29, p < .001$. Females endorsed the incorporation of cultural activities significantly more than males, and perceived that their families valued physical education more than did males.

The means were also examined by schools. As shown in Table 4, students at 'NC' school appeared to be more positive about their families' valuing of physical education than the students at 'TC' school, who were in turn more positive than students at 'PC' school. Students at PC most strongly supported the inclusion of cultural activities and values in physical education, followed by TC and then NC. Finally, in relation to personal valuing of physical education, the means for PC were the most positive, followed by NC and then TC.

A one-way ANOVA was used to explore the differences between the means by schools for all students. There were no statistically significant differences found between schools for student perceptions of family valuing of physical education, $F(2, 99) = 2.08, p < .13$, student valuing of cultural activities in physical education, $F(2, 99) = 1.04, p < .36$ and the personal attitudes of students towards physical education, $F(2, 99) = 2.00, p < .14$. Hence, there were no statistically significant differences between schools for any of the factors.

	Year Level		Gender		School		
	Year 9 (<i>n</i> = 58)	Year 10 (<i>n</i> = 43)	Male (<i>n</i> = 53)	Female (<i>n</i> = 48)	NC (<i>n</i> = 40)	TC (<i>n</i> = 44)	PC (<i>n</i> = 17)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Family	2.16 (.82)	2.24 (.97)	2.38 (.88)	1.99 (.85)	2.03 (.84)	2.40 (1.01)	2.06 (.43)
Cultural	2.58 (.84)	2.34 (.67)	2.72 (.84)	2.22 (.62)	2.43 (.77)	2.60 (.82)	2.29 (.69)
Personal	2.04 (.63)	1.92 (.51)	2.06 (.62)	1.92 (.53)	1.93 (.48)	2.11 (.70)	1.81 (.39)

Table 4: Means and Standard Deviations for Family, Cultural and Personal Physical Education by Year Level, Gender and School

Discussion

This study explored the importance of cultural activities within physical education for students, and how these could be considered as one aspect of culturally responsive pedagogy. From a Cook Islands perspective, cultural activities range from agricultural production (planting), domestic chores, fishing, traditional sports and games (such as dancing, drumming, and music), fishing, etc. These cultural activities have components of cultural values such as *akangateitei* (respect), *taokotaianga* (sense of belonging), *akatano* (discipline), *kopapa maroiroi* (physical), and *vaerua ora* (spirituality). In a recent study, McCaughtry (2006) showed that when students valued cultural activities in physical education, this enhanced students' learning such as socially, culturally, and inclusively. Cultural activities have been shown to help students to become confident and increase participation in physical education (Sleeter, 2005).

An interesting finding in the current study was that girls perceived that their families valued cultural activities in physical education significantly more than boys. Girls appeared to have respect for cultural activities and seemed to enjoy the family orientation of the activities. Also, the activities were structured and organised whereas boys' attitudes towards cultural activities may have been more casual, meaning that they wanted to play games rather than take part in organised cultural activities. Maybe cultural activities were considered feminine because there was music, drumming and dancing included with the instruction. In a recent study, Arabaci (2009) argued that attitudes towards physical education preferences changed according to gender and age. In middle schools ages ranges from 11-13 years old. During this age period students are learning about the body and movement whereas in secondary schools at ages 14-18, students showed more positive attitudes towards physical education than middle school students. In addition, secondary school students preferred co-ed physical education, rather than single sex physical education. However, in the current study, personal valuing of physical education was no different for boys and girls.

The findings in this study showed that girls valued physical education that included cultural activities more than the boys. They also perceived that their families were more positive about physical education including cultural activities than boys. Te Ava (2013) highlighted this finding given that several other studies have found that boys have been reported to enjoy physical education more than girls. Silverman (1999) stated that physical education classes have long been seen as male dominant. Silverman found that student success rates, especially for girls, declined when boys were also involved in activity skill learning. This is not to say that girls were completely unsuccessful in physical education; however, other studies, such as the one by Small and Thornhill (2008), found that in a multicultural setting, girls' attitudes towards participation and skill learning in physical education were more creditable and consistent than boys'. It may be that boys value the western style of PE that includes skills related to rugby, rugby league and other contact sports showing prowess and muscularity within a form of physical education that is more competitive. On the other hand, girls were more positive about the inclusion of cultural activities in physical education which tended to involve cooperation and team work. Indeed, in a recent study, Rubie-Davies, Flint, and McDonald (2010) showed that males' motivation was more performance oriented while females' motivation was more mastery orientated. This means that boys were more competitive whereas girls were focused on learning skills. This finding has implications for teacher education as well. Typically in teacher education programmes, pre-service teachers learn how to cater for students in schools. Not a lot of attention is paid to the idea that boys and girls may be motivated by different emphases in physical education. Perhaps teacher education programmes could pay more attention to the differences in how girls and boys can be positively motivated to participate in physical education.

The findings in relation to girls is worthy of future investigation, because if the findings that girls are more positive about the inclusion of cultural activities in physical education were to be replicated in other studies, then enhancing the interest of girls in physical education might be achieved through cooperation and team work, which is a feature of cultural activities in physical education (Te Ava, Rubie-Davis, Airini, & Ovens, 2013). Again, this suggests that further exploration of this finding in other studies, and to perhaps interview parents about their ideas about physical education, and how they encourage their children to participate, would be of benefit.

Overall, students valued the physical education programme they normally encountered at school more than they valued the cultural activities being included in physical education. Similarly, they saw their families as valuing physical education more than they valued the inclusion of cultural activities and values in their physical education programmes. This was an unexpected finding. However, it was perhaps not surprising as the students were not used to having cultural activities included in their school activities (Te Ava, Rubie-Davies, Airini, & Ovens, 2013). Their PE programmes uses the New Zealand curriculum and focuses on developing physical skills. The development of such skills is not promoted as being learnt through cultural activities. Furthermore, in this particular study, the students were only exposed to four lessons in which cultural activities and values were included. Hence, it is possible that they did not experience enough lessons in which cultural activities were included for them to judge and value the difference between a physical education programme that included cultural activities and one that did not. Another possible reason was that if the class teachers had been taking the cultural lessons then their teaching style might have been completely different to what they experienced with the first author taking the lessons. This change in teaching personnel may have created different thoughts about physical education rather than the activities themselves. Students do form close relationships with their own teachers. So having a different teacher take the cultural lessons is a limitation of the study.

Te Ava, Rubie-Davies, Airini, and Ovens (2013) suggested that not all students like cultural activities. They proposed that this was likely to be particularly true in schools where cultural activities have not been historically valued. Unfortunately, over past years this has happened in the Cook Islands as western forms of physical education have come to take precedence over traditional cultural activities (Arama & Associates, 1999). The focus is on skills that apply to games such as rugby. Hence, over time, students have begun to equate physical education with western forms and no longer perceive cultural activities as constituting 'physical education'. In a country like the Cook Islands where physical education teachers are often from overseas, the importance of considering the cultural background of students is important. Teacher education programmes need to ensure that in physical education, as in other curriculum areas, that their preservice teachers are taught to include culturally appropriate activities in their teaching. This could become part of an induction programme in the Cook Islands. It is likely that if the inclusion of cultural activities within PE in the Cook Islands were to become a core component of the lessons, that students would become more accepting of them.

If incorporated into the physical education curriculum, the provisions of cultural learning and cultural activities suitable for students from various cultural backgrounds may help to increase student participation and enthusiasm (Cook Islands Ministry of Health, 2005; Cook Islands Ministry of Education, 2004). Students would also gain a better understanding of their own cultural values, as well as an increased sense of identity. Although Cale (1996) asserted that students were reluctant to participate in cultural activities at school, this may be because the western model of teaching has provided economic challenges and life advantages to students. It has also been privileged for many years. This western model prepares students

to become confident once they have finished school, so that they can be successful in a western-dominated environment. The acceptance of western culture and curriculum in schools has been appropriate for students, given its perceived life advantages. The Cook Islands Ministry of Education (2004) health and physical education curriculum offers a number of cultural contexts to explore within physical education. The inclusion of such activities may enhance students' ability to participate in physical education; however, the inclusion of Cook Islands cultural activities in school has been actively discouraged for several years (Crocombe, 2001). This has resulted in the western way of teaching physical education remaining dominant in the Cook Islands. Many teachers in the Cook Islands are expatriates from overseas. They have no training what so ever related to Cook Islands cultural activities and values, so they have less likelihood of being able to incorporate cultural values. As the qualitative results in the larger study showed, when students provided their reasons for particular selections within the questionnaire, they were more positive about the inclusion of cultural activities and values within physical education (Te Ava, 2011).

This section has mainly explored students' valuing of physical education as a curriculum area. However, some students saw benefits in physical education as a means to achieving a healthy, active lifestyle (Kirk, 2004). On the other hand, students who did not value physical education commented negatively; Thomas, Nelson, and Silverman (2011) suggest these students do not perceive the benefits of physical education for their learning. Students who commented positively perceived physical education as an important part of their wellbeing and enjoyed the inclusion of cultural activities in physical education (Te Ava, 2013). For example, students commented that they appreciated the inclusion of cultural activities in physical education because it was a practice that was not emphasised in the schools. Although western sport dominated Cook Islands schools, several students expressed a desire to see more cultural activities included in physical education with less emphasis on western sport. In one study, Rossi, Sirna, and Tinning (2008) suggested that those who valued cultural activities in physical education performed better in their schooling than students who did not. The study by Rossi et al. (2008) showed that inclusion of cultural activities could help healthy students do well overall in school, and that students understood physical education to be an important part of their lifestyle if they participated in it. Similarly, Dagkas (2007) suggested that students from an ethnically diverse society perceived physical education as being important in helping them to become active learners. Although the Cook Islands is not ethnically diverse, this finding could link to Cook Islands education particularly in relation to the teacher education programmes. Such programmes could find the means to strengthen beliefs in their pre-service students about the value of physical education so that, in turn, they can enthuse their own students about physical education.

Conclusion

The quantitative results captured students' feelings for the family, cultural, and personal factors related to physical education in schools. The analyses also showed that the students involved in the study valued the inclusion of cultural activities within physical education less than they valued traditional forms of physical education, and much less than they perceived that their families valued physical education. The findings suggested that the students were not used to the inclusion of traditional activities and values in the physical education programme because it was new to them. Further the cultural activities were taught by the first author rather than the students' normal PE teacher. This unfamiliarity may have influence the results because students may have preferred to be taught by their regular teacher. However the qualitative research findings showed that students acknowledged the

significance of the inclusion of cultural activities in physical education and indicated that they wanted to learn more about their cultural identity and language. Increasing the teaching of cultural activities relies on school principals and administration encouraging and supporting physical education teachers to teach cultural activities. Because cultural activities were not included in physical education on any regular basis, the students were used to Western forms of physical education. This may have been one reason why the students did not value cultural activities. It should be remembered, however, that of the students who responded in relation to the inclusion of cultural activities, the majority saw these activities as enhancing their experience of physical education. Further, students only experienced four lessons that included cultural activities and so, were these to become more commonplace, it was possible that student positivity towards the inclusion of cultural activities in physical education would increase.

Most students appeared to believe that their family valued physical education as an important component of the curriculum, but some students believed that their family thought that it was not important to value physical education in the curriculum because these parents wanted their children to become academic learners and not focus on physical education. On the other hand, most students perceived physical education as an important part of their life. Perhaps they saw the personal benefits of engaging in physical education and understood how physical education could play an important part in helping them live a healthy lifestyle (Arama & Associates, 1999). While students did value the inclusion of cultural activities within physical education, positive perceptions were not universal.

This study provided fresh insight into how the inclusion of cultural activities was interconnected in student learning. As physical education teachers we should be creative in teaching physical education activities. Having an open mind in teaching physical education could bring various interconnected values and dimensions to teacher education. Cultural activities could be relevant given that academic education traditionally has had a higher priority. The results showed current student attitudes, and revealed implications for both current practising teachers as well as teacher education programmes. Cultural activities provide students with an opportunity to explore their social and cultural needs, a balance that is not limited merely to addressing the academic needs of students within the school environment (Te Ava, 2013). The study was also concerned with creating wellbeing within learning in a manner that was more inclusive. It was possible for a learning environment that represented continuity in students' development of cultural, as well as academic understanding to be created and maintained. The inclusion of culture in learning as a reflection of a student's culture and identity could become an important factor in students' achievements in school and is something that needs to be recognised within teacher education programmes. Finally, this study created new challenges for teacher education and continued professional development, and that was to offer alternative pathways within initial teacher training, and supported the practice of stimulating and supporting pre-service teachers' active learning so that they could become motivated and enthusiastic about teaching cultural activities in physical education.

If teacher education were looking for new ways to gain an insight into students' cultural background responsively, then inclusion of cultural activities in physical education would serve teachers better as far as teacher practice is concerned (Te Ava, 2013).

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