2011, Vol. 3, No. 1

PHENex Journal/Revue phénEPS

Possibilities for Physical Education Teacher Education: Service Learning and TGfU

Possibilités d'apprentissage en formation à l'enseignement en éducation physique: apprentissage dans la communauté et l'approche «Apprendre /comprendre par le jeu»

Daniel Robinson
St. Francis Xavier University

This article reports on a mixed-methods study[1] that investigated various outcomes resulting from pre-service physical education (PE) teachers' implementation of the Teaching Games for Understanding (TGfU) model as part of a compulsory service learning project. The service learning project was meant to provide pre-service PE teachers authentic opportunities to develop knowledge about TGfU, confidence implementing TGfU, and an increased likelihood of incorporating TGfU in their future practice. Results indicate that pre-service PE teachers benefitted from the service learning project, particularly with respect to these three areas. Furthermore, the service learning opportunity also enabled an understanding through experience of TGfU's merits related to games play enjoyment, games understanding, and skill development. In light of these findings, potential implications of the study are offered and discussed.

Cet article décrit une étude à méthodes mixtes[1]sur l'expérimentation de l'approche « apprendre/comprendre par le jeu » par des étudiants en formation en éducation physique dans le cadre d'activités obligatoires d'apprentissage dans la communauté . Ce projet d'apprentissage visait à donner aux futurs enseignants d'éducation physique une occasion concrète de se familiariser davantage avec l'approche, à leur donner confiance en leur aptitude à implanter une telle approche et à les inciter à intégrer cette approche à leur enseignement une fois leur formation terminée. Les résultats indiquent que les futurs enseignants d'éducation physique ont tiré profit du projet d'apprentissage, surtout dans trois domaines. En effet, ce projet leur a permis de mieux comprendre, par l'expérience, les mérites de l'approche associés au plaisir de jouer, de mieux voir comment on comprend par le jeu et de perfectionner leurs habiletés. Partant de ces résultats, l'auteur fait état et discute des effets possibles de l'étude.

Introduction

This article reports on a mixed-methods study investigating various outcomes resulting from pre-service physical education (PE) teachers' implementation of the Teaching Games for Understanding (TGfU) model as part of a compulsory service learning project. The introduction of the service learning project as a course requirement, in an attempt to circumvent some of the most commonly cited limitations of the field experience, was meant to provide pre-service PE teachers authentic opportunities to develop knowledge about TGfU, confidence implementing TGfU, and an increased likelihood of incorporating TGfU in their future practice. An introductory overview of service learning and TGfU is provided in order to provide important contextual information for the study. This overview is followed by an explanation of the research methods, a summary of the results, and a discussion of the results – with a focused emphasis on potential implications.

An Alternative to the Field Experience: Service Learning

Many undergraduate university programs, in a considerable number of disciplines, currently include a field experience component as a degree requirement for students. The field experience (alternatively sometimes labeled clinical experience, internship, or practicum) typically occurs for students in "professional" schools or faculties; these include, among others, Teacher Education, Nursing, Architecture, Social Work, and Engineering (Ralph, Walker, & Wimmer, 2008; Wimmer, 2008). The rationale for the existence of the field experience rests upon the premise that "authentic and deep learning" (Ralph et al., 2008, p. 2) occurs when students are afforded meaningful opportunities to apply learned knowledge and skills to real-life scenarios in the professional field (Renzulli, Gentry, & Reis, 2004). This notion, of course, is not altogether unfamiliar to those within Teacher Education. It has been well over a half-century since Dewey (1938) made this point clear, suggesting, "all genuine education comes through experience" (p. 25).

Within Teacher Education, pre-service teachers who have engaged in such "on-the-job training" have perceived numerous positive effects, including building satisfying professional relationships, realizing technical and professional achievements, and developing feelings of self-efficacy (Ralph et al., 2008). However, despite these positive effects, pre-service teachers have suggested there also exist negative elements related to the field experience; these include individual personal/professional challenges, site-based interpersonal concerns, and university-related policy/procedural problems (Ralph et al., 2008; Ralph, Walker, & Wimmer, 2009). Notwithstanding the obvious potential for the field experience to provide positive educational experiences for pre-service teachers, the perceived negative aspects unquestionably prevent the experience from being wholly ideal. For example, the most commonly shared negative aspect (shared by almost one half of pre-service teachers) has been a lack of adequate mentorship or supervisory assistance (Ralph et al., 2008).

Without adequate mentorship, pre-service teachers are invariably required to call upon their own resources as they struggle to connect in-class content with in-the-field context. When such is the scenario, pre-service teachers necessarily must attend more closely to their personal biographies (Britzman, 1991) as students. Consequently, they functionally become enabled to "teach as they were

taught" as an exercise in what Lortie (1975) has most-appropriately labeled an apprenticeship of observation. Furthermore, the other half of pre-service teachers (who do not cite this lack of adequate mentorship) run the risk of reproducing equally problematic practices through occupational socialization (Lawson, 1988); these pre-service teachers "teach as their mentors teach." Without a mentor (or with a mentor unaware of the knowledge and skills taught and learned in a university program), possibilities for field experience learning become more "hit-and-miss" than a purposeful exercise.

Service learning, as an alternative approach for providing pre-service teachers an authentic in-the-field experience, provides unique possibilities. Differing from the field experience, service learning is a "class-based, credit-bearing experience in which students participate in an organized service activity that meets a particular need of a community" (Stevens, 2008, p. xii). Unlike professors' limited-to-no role in pre-service teachers' field experience, within service learning, professors (among other tasks) design learning outcomes, help students connect in-class learning with in-the-field learning, and spend time supporting students in the community sites (Stevens, 2008).

Service learning opportunities differ from the field experience in one especially significant respect. Whereas providing pre-service teachers opportunities for the field experience is largely accepted as a responsibility owed by school jurisdictions to universities and provincial governments (within Canada), the service learning scenario is, by definition, a much more reciprocal arrangement. Currently, within some provinces, school jurisdictions (and by extension their schools and teachers) are legally required to provide students and supervisors for pre-service teachers in Teacher Education programs (see Government of Alberta, 2009; Government of Ontario, 2010). While undoubtedly many supervising teachers willingly invite pre-service teachers into their classes, the system itself is predicated upon the notion that teachers *must* do so. Furthermore, in those cases when the supervising teacher invites a pre-service teacher into her/his classroom, the notion of reciprocity is not often present (and certainly is not required). The field experience is intended to benefit the student first and foremost; benefits to the school and supervising teacher are, in effect, secondary in nature. These points are not meant to devalue the contribution pre-service teachers are capable of making to students, classes, and school culture. Indeed, while working with pre-service teachers, such impact has been witnessed firsthand on numerous occasions. However, again, the field experience model is one that is primarily intended to meet the needs of the pre-service teacher first (which coincidentally might explain why supervising teachers are often afforded a stipend or honorarium for their "volunteer" work with pre-service teachers).

Service learning's reciprocity ensures that both pre-service teachers and the cooperating community partners benefit in a sort of symbiotic relationship; this reciprocity requires that pre-service teachers benefit while the community simultaneously benefits. It is also essential to make clear that the "service learning" label does not suggest that the community is the one requiring a service – to be provided by those from the "academy." Kendall (1990) has cautioned against such a view before:

We are learning that without an emphasis on the relationship between the server and "those served" as a reciprocal exchange between *equals* [emphasis added] that relationship can easily break down…. Paternalism, unequal

relationships between the parties involved, and a tendency to focus only on charity – "doing for" or "helping" others – rather than on supporting others to meet their own needs all became gaping pitfalls for program after well-intentioned program. (pp. 9-10)

Such a paradigmatic shift requires that both pre-service teachers and the community partners recognize their own strengths while also being aware of their own needs. By doing so, and coming together, pre-service teachers and their community partners can provide one another with a context in which both can simultaneously benefit (Jacoby, 2010).

Teaching Games for Understanding

Teaching Games for Understanding (TGfU) is a games-centered teaching model that was initially intended to address traditional games teaching limitations, especially with respect to such things as techniques-based instruction and sustaining learners' games interest (Bunker & Thorpe, 1982, 1986). Manifestations of these limitations, opined Bunker and Thorpe (1986), could be observed through various outcomes, including learners' limited psychomotor success, inadequate games understanding, poor decision-making capabilities, and overdependence on teachers. Unlike traditional games teaching, in which learners are often taught a prescribed skill with limited-to-no mention or understanding of rationale or significance (Bunker & Thorpe, 1986), TGfU's focus is on teaching the *why* before teaching the *how* of a game. Such a paradigmatic shift, Bunker and Thorpe (1986) suggest, enables learners' increased games interest, enjoyment, and decision-making abilities.

Traditional teaching, in which a "series of highly structured lessons rely on the teaching of skills and techniques" (Werner, Thorpe, & Bunker, 1996, p. 28), has previously been labeled "The Technical Model." Within The Technical Model, once learners have mastered games skills, there is an expectation that these skills will be transferable to games and game-like scenarios (Werner et al., 1996). However, in practice, students' application of their learning does not necessarily follow such a linear path. To this, Holt, Ward, and Wallhead (2006) have suggested that with a techniques-based approach students learn inflexible techniques resulting in an inability to transfer and apply their learning to game scenarios. While some might suggest that a minor or small-sided games approach (as a variation of traditional practice) would circumvent this issue, like the full game approach, such teaching is still nonetheless "based on a facile analysis of games and what is required to play them effectively" (Launder, 2001, p. 28). TGfU as "The Tactical Model" presents an alternative that might also be recognizable as similar to some other recently popular terms for games-centered teaching approaches; in addition to TGfU these include Play Practice, Games Appreciation, and Games-Centered Learning (Butler, 2006; Griffin, Butler, Lombardo, & Nastasi, 2003; Hopper, 1998; Werner et al., 1996).

In the almost 30 years which have passed since the publication of Bunker and Thorpe's (1982) original model (see Figure 1), TGfU has become a "focus for researchers and teachers in several countries" (Griffin, Brooker, & Patton, 2005, p. 214) including Canada, the United States, and the United Kingdom. This acceptance within Western nations has also been similarly evidenced in other countries within South America, Africa, and Asia (Griffin et al., 2005; Light, 2005). While *all* researchers and teachers within the field are yet to embrace

TGfU, the increasing presence of TGfU within the literature suggests that it is here to stay.

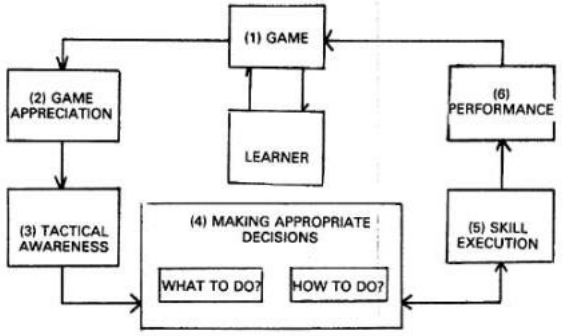

Figure 1. Bunker and Thorpe's (1982) Curriculum Model.

Physical Education and TGfU

Without question, there has been resistance by both pre-service and in-service PE teachers to implement the TGfU model in their games instruction (Kirk, 2005; Randall, 2008). Kirk (2005) suggests that there exists a *massive* resistance to using a TGfU approach, "particularly [by] primary and elementary school generalist teachers, because this approach potentially risks exposing teachers' lack of experience and competence as games players" (p. 224). Kirk further explains secondary PE specialists also are often resistant to TGfU because they envision themselves as successful products of the more traditional and technical approach; these teachers are quite comfortable relying on their apprenticeship of observation (Lortie, 1975). Pre-service PE teachers' misconceptions about TGfU (in addition to the realization that they know less about games than they had once believed) have led them to be especially reticent about using TGfU in their teaching practice. Such reticence has been attributed to the significant shift in pedagogical thinking that is required with respect to student learning, personal sport and PE experiences, and the teaching of games (Kirk, 2005; Randall, 2003; Turner 2005).

In-service and pre-service PE teachers who attempt to adopt a TGfU approach have faced challenges by existing and entrenched patterns of authority and power relations within schools (Light, 2004; Tinning, Macdonald, Wright, & Hickey, 2001). This is especially true of pre-service PE teachers who must negotiate their identity and pedagogical understanding while being in a subordinate power position with a supervising teacher. With such a power imbalance, there should be little surprise that many pre-service PE teachers become inclined to model the practice of their supervising teachers (Askins & Imwold, 1994; Hardy, 1995).

Research into pre-service PE teachers' implementation of TGfU has been extremely limited. In their research into pre-service PE teachers' implementation of TGfU in their field experience, Melnychuk and Robinson (2008) found that over 95% of pre-service PE teachers reported their mentor teachers were "not interested" in using a TGfU approach. In such an environment where supervising teachers have these sorts of attitudes (and especially considering the inclination

of pre-service PE teachers to model their supervising teachers), the implementation of the TGfU model by pre-service PE teachers during the field experience is unlikely.

Light (2002, 2003) has studied pre-service generalist primary school teachers' experiences while learning about TGfU in a university course. In his study, he categorized pre-service teachers into three groups based on their attitudes towards PE and sport (engaged, ambivalent, and reluctant). During the pre-service teachers' introduction to TGfU, ambivalent and reluctant students demonstrated increasing engagement. Light's personal assumptions about TGfU's promises were supported when some of the pre-service teachers attributed their increased engagement to the unique and promising nature of the TGfU-framed activities. Light also inquired into the pre-service teachers' intentions related to games instruction. Most of the pre-service teachers demonstrated an increased inclination to teach games in the future while the most reluctant students continued to demonstrate their initial aversion to do so.

In 2006, Li and Cruz conducted a study with highly skilled pre-service PE teachers. While Li and Cruz found that all of the pre-service PE teachers in their study viewed TGfU positively as a viable curriculum model, a full half of the participants indicated that they would not implement the model in their future teaching careers. Their reluctance was due, in part, to a sense of confusion related to tactics and techniques when teaching (Li & Cruz, 2006). Most recently, Li and Cruz (2008) completed a qualitative study in which they analyzed transcribed interviews and reflective journals of four pre-service PE teachers about their implementation of the TGfU model in their games instruction. All four of the pre-service PE teachers perceived TGfU positively and further viewed it as a "viable instruction contributing to pupils' cognitive development" (Li & Cruz, 2008, p. 20). Despite the conceptual and instructional difficulties these pre-service PE teachers' experienced related to space, class size, and the design and explanation of games complexities, the four teachers nonetheless very clearly expressed a willingness to adopt TGfU in their future teaching (Li & Cruz, 2008).

The Research Questions

This research study aimed to add to this limited body of literature related to pre-service PE teachers and TGfU. More specifically, it was especially important to determine how pre-service PE teachers' participation in a service learning project might enable them to develop knowledge about TGfU, confidence implementing TGfU, and an increased likelihood of incorporating TGfU in their future practice. While Light (2002) inquired into pre-service teachers' future intentions with respect to TGfU after they were exposed to the model in a university class, this study further examined such inclinations after university instruction *and* after a service learning opportunity. In this respect, this study attempts to add to the limited knowledge about pre-service PE teachers' knowledge, confidence, and intentions related to TGfU after being afforded an authentic opportunity to engage with the model in an after-school service learning project. The primary research questions framing this study were:

- How do pre-service PE teachers' TGfU knowledge, confidence, and intentions about TGfU change as a result of course instruction and service learning?

- What are the major TGfU understandings pre-service PE teachers develop as a result of their participation in a service learning project?

Methods

Setting and Participants

The research participants were pre-service PE teachers (n = 25) enrolled in an elementary PE pedagogy course. These pre-service PE teachers were all in the first year of a two-year Bachelor of Education (B.Ed.) degree program and all had previously completed a Bachelor of Human Kinetics (B.HK.) or Bachelor of Kinesiology (B.Kin.) degree. Most of the pre-service PE teachers' B.HK. or B.Kin. degrees included a Physical Education Teacher Education (PETE) major or minor.

After three weeks of instruction related to TGfU philosophy, research, and application, small groups of pre-service PE teachers collaborated to design eight-lesson units in which they were required to apply Bunker and Thorpe's (1982, 1986) curriculum model. Once the lesson plans were complete (and reviewed by their university instructor), the 25 pre-service PE teachers taught the lessons as part of a service learning project. These after-school lessons were 90 minutes in length and were taught twice a week for four consecutive weeks (i.e., there were eight 90-minute lessons in all). The upper elementary students (ages 9-12) who participated in the service learning program were all volunteers. The service learning project occurred at one of four local-area elementary schools. The number of elementary students attending the service learning program ranged between 17 and 23 at each of the four sites. Generally, almost all elementary students were retained throughout the entire program at all of the sites. The service learning opportunity also allowed the professors to offer an authentic learning context that avoided Ralph et al.'s (2008) nine most commonly cited negative aspects of the Teacher Education field experience (see Table 1).

Table 1
Negative Aspects of the Field Experience and Service Learning Alternatives

Negative Aspect of Field Experience	Service Learning Project Alternative
Received inadequate mentorship/supervisory assistance.	A university professor reviewed all lesson plans beforehand, was present at every teaching session, and was available for further assistance throughout the term.
Experienced personal financial problems.	The 90-minute sessions did not prevent pre-service teachers from maintaining part-time employment and pre-service PE teachers were reimbursed for travel.
Dealt with heavy workload issues.	The service learning project was a course component and therefore the course workload was adjusted accordingly.
Was dissatisfied with the post-field experience term.	The service learning project occurred during a term so that on-going and end-of-term reflection and discussion would be possible.
Encountered program/organizational inequities.	A university professor ensured that all four service learning sites were similar and that pre-service PE teachers' roles and responsibilities were equitable.
Overload with irrelevant practicum tasks.	Tasks were clearly defined as part of the service learning assignment. There were no other individuals who could assign additional tasks to pre-service teachers.
Experienced feelings of non-acceptance (not appreciated).	Students, parents, and school administration expressed their appreciation to the students throughout, and at the end of, the service learning project.
Received insufficient preparation in pre-practicum coursework.	Course time was dedicated to the preparation of the service learning project.
Faced unprofessional treatment by field experience office staff.	There was no field experience office staff involved.

Data Collection and Analysis

Pre-service PE teachers completed surveys at three different times during the semester. The closed questions, as statements with Likert-type responses, posed at all three times required responses related to TGfU knowledge, confidence, and intentions. These surveys were administered before students were introduced to TGfU in the course (Time A), after TGfU instruction but

before the service learning project began (Time B), and at the conclusion of the service learning project (Time C). The three closed statements were:

- I feel knowledgeable about the TGfU Model.
- I feel confident in my ability to teach using the TGfU model.
- I will incorporate the TGfU model in my teaching practice.

For each of these three statements, pre-service PE teachers were required to respond with a single response (strongly disagree, disagree, neutral, agree, strongly agree). Responses to the three closed statements were initially coded with numerical equivalents (strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5). Once recoded, the mean scores at the three different occasions were compared. More specifically, using SPSS 15.0, a within-subjects repeated measures analysis of variance (ANOVA) and two-tailed t-tests were performed so as to determine the significance of change between students' responses at all three times.

In addition to the three statements to which students responded at three different times, pre-service PE teachers were also asked open questions at the completion of the service learning project. These questions, among others, included:

- What successes did you experience implementing TGfU during the service learning project?
- What challenges did you experience implementing TGfU during the service learning project?
- Based on your experiences in your service learning project, what did the students like about the TGfU model?
- Based on your experiences in your service learning project, what did the students dislike about the TGfU model?

Responses to the open questions were originally analyzed by the principal investigator who looked for key issues, similarities, differences, recurring ideas, clustering, patterns and relationships in the pre-service PE teachers' responses. By coding and categorizing this verbatim data according to methods outlined by Creswell (2005) and Miles and Huberman (1994), dominant themes emerged, allowing for analysis and interpretation. To confirm and/or disconfirm the identified themes and supporting comments, a second researcher also analyzed the written responses.

Results

Closed Questions at Times A, B, and C

A repeated measures ANOVA showed a significant increase in participants' TGfU knowledge (F (2,38) = 61.82, $p < .001$), confidence (F (2,38) = 39.58, $p < .001$), and future teaching intentions (F (2,38) = 23.36, $p < .001$) at the three different times (see Table 2). Furthermore with respect to these three variables, tests of within-subjects contrasts showed that mean scores were significantly higher at Time C than Time B and at Time B than Time A. A post hoc analysis test (Fisher's protected t^2) revealed the degree of this significance.

Table 2
Participants' Mean Responses at Three Times (A, B, C)

Question	Time A (95% CI)	Time B (95% CI)	Time C (95% CI)	ANOVA *p*	Significant Contrasts
Q1 (knowledge)	M = 1.7000	M = 2.7500	M = 4.0000	< .001	A < B < C
	SD = .9787	SD = .9105	SD = .7255		
Q2 (confidence)	M = 1.7500	M = 2.6500	M = 3.600	< .001	A < B < C
	SD = 1.0195	SD = .9333	SD = .9947		
Q3 (intentions)	M = 2.6500	M = 3.3500	M = 4.2500	< .001	A < B < C
	SD = 1.2258	SD = .9333	SD = .5501		

For the first statement (I feel knowledgeable about the TGfU Model), the pre-service PE teachers shared that they had limited knowledge before learning about TGfU in their elementary PE pedagogy course (Time A: M = 1.7000, SD = .9787). However, after three weeks of instruction, their perceived knowledge increased (Time B: M = 2.7500, SD = .9105). This was an extremely statistically significant change (t_{19} = -4.972, $p < .001$, $\alpha = .05$). After students completed the service learning project, their perceived knowledge increased further (Time C: M = 4.0000, SD = .7255). Again, this was an extremely significant change (t_{19} = -8.753, $p < .001$, $\alpha = .05$).

For the second statement (I feel confident in my ability to teach using the TGfU model), the pre-service PE teachers shared that they had limited confidence to teach using the TGfU model before learning about TGfU in their elementary PE pedagogy course (Time A: M = 1.7500, SD = 1.2258). However, after three weeks of instruction, their level of confidence increased (Time B: M = 2.6500, SD = .9333). This was an extremely statistically significant change (t_{19} = -4.723, $p < .001$, $\alpha = .05$). After students completed the service learning project, their level of confidence increased further (Time C: M = 3.6000, SD = .9947). Again, this was an extremely statistically significant change (t_{20} = -5.146, $p < .001$, $\alpha = .05$).

For the third statement (I will incorporate the TGfU model in my teaching practice), the pre-service teachers shared that they had limited intentions to incorporate TGfU into their games instruction before learning about TGfU in their elementary PE pedagogy course (Time A: M = 2.6500, SD = 1.2258). However, after three weeks of instruction, their intentions to incorporate TGfU increased (Time B: M = 3.3500, SD = .9333). This was a statistically significant change (t_{19} = -2.774, $p = .012$, $\alpha = .05$). After students completed the service learning project, their intentions increased further (Time C: M = 4.2500, SD = .5501). This was an extremely statistically significant change (t_{19} = -5.107, $p < .001$, $\alpha = .05$).

Open Questions at the End of the Service Learning Project

Through an analysis of pre-service PE teachers' responses to the open questions, a number of themes related to the successful implementation of TGfU emerged. The three most salient and common themes that emerged were Games Play Enjoyment, Games Understanding, and Skill Development. Of the 23 participants who addressed the open questions (2 did not answer the questions), 17 made clear mention of Games Play Enjoyment, 16 of Games Understanding, and 14 of Skill Development.

Games play enjoyment. Pre-service PE teachers made many references to their observations of students' games enjoyment due to the privileging of games play in their TGfU-modeled lessons. For example, one student shared, "I found that students really enjoyed playing the games" and another added, "students enjoyed that each lesson began with a game" when they were asked about the successes they experienced while implementing TGfU during the service learning project. Another student similarly made this point when she asserted, and asked, "Kids really enjoy the TGfU model. What kid doesn't like to play games at the start of a lesson rather than do strictly skills?" When questioned about what their students enjoyed most about the TGfU model, the pre-service PE teachers offered similar accounts of their students enjoying the games play:

- My group definitely enjoyed the fact that they were always playing a game. I found that they never asked to play the actual game of tennis, which usually happens when doing drills and skills.
- The students liked playing games in general. I think they understood that they were playing a modified version in order to be better prepared when they were able to play a "real" game later on in their tennis careers. I think that they appreciated that all of the activities related back to the game somehow.

Games understanding. In addition to pre-service PE teachers believing that students' games enjoyment was one of the most successful aspects of their TGfU implementation, they also were very clearly aware of the benefits related to students' developing understanding, especially with respect to games tactics. For example, one student observed, "I found the TGfU approach helped students understand tactics how to play the game," another offered, "the children gained a greater sense of understanding of how certain skills transfer from game to game," while yet another added, "the students' skills seemed to solidify as their understanding of the game improved." Related to this development of games understanding, two other students further remarked:

- I feel that through this approach the students get a better understanding of the tactics that go along with the game as opposed to just the technical aspect – we will see an improvement in game play.
- I think many students go through Physical Education and do not understand how the games relate. I also think many students do activities in class without thinking. There is little comprehension needed when you can just perform the activity. Students can learn so much more from TGfU and make their class time more valuable that just an 'academic' break. Why not get the dose of physical activity, have fun, and learn all at the same time?

Skill development. Pre-service PE teachers (perhaps aware from their university coursework that one of the misconceptions and misguided criticisms of

TGfU is that technical development must necessarily be sacrificed in favor of tactical development) expressed satisfaction with students' skill development with the TGfU approach. Asked about some of their greatest successes implementing the TGfU model, one student reported, "seeing the improvements in skills from the first day to the last," another affirmed, "I was able to see the students improve their tennis skills," while another added, "I enjoyed watching students grasp the skills." These pre-service teachers also recognized that they were able to teach students skills, yet were obviously aware that allowing students to practice and develop skills in authentic contextualized game-like scenarios is often most ideal. One student made this point especially clear, suggesting:

- For the most part, TGfU is a great way to teach skills. It allows you to introduce a new skill, and then try it out in a game-like fashion, rather than boring them with 30 minutes of practicing skills. Teaching skills so they can apply them – while making decisions – in games that let kids practice and play really worked with my kids.

Discussion

Of the 25 pre-service PE teachers (who had all completed a B.HK. or B.Kin. degree), only one had "heard" of TGfU before beginning a BEd degree. Consequently, that they did not feel knowledgeable about, or confident teaching TGfU when the course began is not altogether surprising. However, it is disconcerting that so many pre-service teachers could have completed a degree in which they had a major or minor in PETE *without* having encountered TGfU. Nonetheless, despite their previous lack of exposure to the TGfU model, the pre-service PE teachers expressed an initial greater intention to incorporate TGfU in their practice. This likely was due to the pre-service PE teachers' realization that the model was about to be taught to them as a/the model for games instruction in schools.

After students were introduced to TGfU through three weeks of instruction related to TGfU philosophy, research, and application, they felt they were much more knowledgeable, confident, and likely to include the model in their future practice. However, though there was a significant increase in these three areas, both their perceived knowledge and confidence were still less than 3 (neutral). Falling somewhere between "neutral" and "disagree" for the statements related to knowledge and confidence, the pre-service PE teachers quite obviously did not yet feel adequately knowledgeable or confident. It is worth noting that without the service learning opportunity, TGfU instruction would have ended at this point. Indeed, in previous years and in previous studies, this is where TGfU instruction was completed. With a mean near neutral (M = 3.3500) for the pre-service PE teachers' intentions to incorporate the TGfU model in the practice, it would seem that at this point, many of the participants were "fence sitters."

Perhaps the most promising data was related to the pre-service PE teachers' responses to the three questions after they completed the service learning project. For all three questions, pre-service PE teachers' increases in mean Likert-scores were greater than the increases resulting from class instruction. Otherwise said, the service learning project made a greater difference. At the conclusion of the service learning project, pre-service PE teachers' agreed that they were

knowledgeable about TGfU (M = 4.0000) and they had intentions on implementing the model in their future teaching practice (M = 4.2500).

Although this research focused on TGfU knowledge, confidence, and intentions, limitations obviously exist with respect to the source of data. More specifically, by relying on the pre-service PE teachers, conclusions can realistically only be made about their *perceived* knowledge and their shared teaching *intentions*. With this limitation it is simply not possible to suggest that pre-service PE teacher knowledge increased significantly as a result of their participation in a service learning project; rather, they just believed they were more knowledgeable. And so, although pre-service PE teachers shared such comments as "I gained a better knowledge on what the TGfU model is and how to implement it" and "I began to understand the concept behind TGfU," it is really impossible to know for sure that these things were true. Future research might address this limitation by questioning or testing pre-service PE teachers' TGfU knowledge before and after they have an opportunity to implement the TGfU model. While no such research currently exists, Dudley and Baxter (2009) have reported on assessing university students' understanding of TGfU using high-stakes testing.

Reporting on pre-service PE teachers' intentions to adopt a TGfU model in their future practice does not allow for conclusions about their actual future practice. Recognizing the challenges faced by neophyte teachers (with respect to the earlier-mentioned existing and entrenched patterns of authority and power relations), it would be especially naïve to believe that their behaviour intentions will become behaviours for all. Longitudinal or follow-up studies with select groups of pre-service PE teachers who participated in similar service learning projects would possibly allow for such conclusions to be made.

While the service learning project had many idealized benefits over the field experience, it is not possible to report if the pre-service PE teachers experienced the benefits idealized by the researchers. For this reason, future research might investigate service learning as a pedagogical practice capable of addressing the previously identified limitations of the field experience. Nonetheless, without question, the most commonly cited negative aspect of the Teacher Education field experience (the lack of mentorship and supervisory assistance) was very likely alleviated. That professors were able to act as constant mentors throughout the service learning project allowed them to remain involved in the pre-service PE teachers' developing knowledge and skills in a manner simply not possible during the field experience.

It is not herein being suggested that service learning ought to replace the field experience in Teacher Education. Indeed, service learning does not replicate the authentic classroom environment in a number of ways. For example, within schools, in-service teachers teach a captive audience (rather than a volunteer one) and they teach multiple subjects to multiple classes all day long (rather than one subject to one class, once a day). Pre-service PE teachers need to "practice" teaching; this is not being argued. However, there is obvious potential for a service learning project as part of a course requirement – it allows the professor and her/his students a unique opportunity to effect meaningful pedagogical development. While field experiences should remain a degree requirement, professors should consider service learning's especially promising potential to inform pre-service PE teachers' TGfU understanding.

References

Askins, J., & Imwold, C. (1994). The existence of conflicting perceptions in a secondary physical education student learning experience. *The Physical Educator, 51*(1), 35-46.

Britzman, D. (1991). *Practice makes practice: A critical study of learning how to teach*. Albany: State University of New York Press.

Bunker, D., & Thorpe, R. (1982). A model for the teaching of games in secondary schools. *Bulletin of Physical Education, 18*(1), 5-8.

Bunker, D., & Thorpe, R. (1986). The curriculum model. In R. Thorpe, D. Bunker, & L. Almond (Eds.), *Rethinking games teaching* (pp. 7-10). Loughborough: University of Technology, Loughborough.

Butler, J. (2006). Curriculum constructions of ability: Enhancing learning through Teaching Games for Understanding as a curriculum model. *Sport, Education and Society, 11*(3), 243-258.

Creswell, J.W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Pearson Education.

Dewey, J. (1938). *Experience and education*. New York: Macmillan.

Dudley, D., & Baxter, D. (2009). Assessing levels of student understanding in pre-service teachers using a two-cycle SOLO model. *Asia-Pacific Journal of Teacher Education, 37*(3), 283-293.

Government of Alberta. (2009). *School act.* Edmonton, AB: Queen's Printer for Alberta.

Government of Ontario. (2010). *Education act.* Toronto, ON: Service Ontario.

Griffin,L.L., Brooker, R., & Patton, K. (2005). Working towards legitimacy: Two decades of Teaching Games for Understanding. *Physical Education and Sport Pedagogy, 10*(3), 213-223.

Griffin, L., Butler, J., Lombardo, B., & Nastasi, R. (2003). An introduction to Teaching Games for Understanding. In L. Griffin, J. Butler, B. Lombardo, & R. Nastasi (Eds.), *Teaching Games for Understanding in physical education and sport: An international perspective*. Oxon Hill: NASPE.

Hardy, C.A. (1995). Types of teaching problems experienced by pre-service teachers during their predominantly school-based teaching year. *British Journal of Physical Education, 26*(4), 21-24.

Holt, J.E., Ward, P., & Wallhead, T.L. (2006). The transfer of learning from play practices to game play in young adult soccer players. *Physical Education and Sport Pedagogy, 11*(2), 101-118.

Hopper, T. (1998). Teaching Games for Understanding using progressive principles of play. *Canadian Association for Health, Physical Education, Recreation and Dance, 27*(1), 1-15.

Howell, D.C. (2007). *Statistical methods for psychology* (6th ed.). Belmont, CA: Thomson Wadsworth.

Jacoby, B. (2010, March). *Creating a culture of engagement that transforms colleges and communities*. Paper presented at the Gulf South Summit on Service Learning and Civic Engagement, Athens, GA.

Kendall, J. (1990). *Combining service and learning: A resource book for community and public service*. Raleigh, NC: National Society for Internships and Experiential Education.

Kirk, D. (2005). Future prospects for Teaching Games for Understanding. In L.L. Griffin, & J.I. Butler (Eds.), *Teaching games for understanding: Theory, research, and practice* (pp. 213-227). Windsor, ON: Human Kinetics.

Launder, A.G. (2001). *Play practice: The games approach to teaching and coaching sports*. Windsor, ON: Human Kinetics.

Lawson, H. (1988). Occupational socialization, cultural studies, and the physical education curriculum. *Journal of Teaching in Physical Education, 7*(4), 265-288.

Li, C., & Cruz, A. (2006). Learning to teach games for understanding: Experiences from four pre-service PE teachers in the Hong Kong Institute. In R. Liu, C. Li, & A. Cruz (Eds.), *Teaching Games for Understanding in the Asia-Pacific Region* (pp. 25-36). Hong Kong: The Hong Kong Institute of Education.

Li, C., & Cruz, A. (2008). Pre-service PE teachers' occupational socialization experiences on teaching games for understanding. *New Horizons in Education, 56*(3), 20-30.

Light, R. (2002). The social nature of games: Australian pre-service primary teachers' first experiences of teaching games for understanding. *European Physical Education Review, 8*(3), 286-304.

Light, R. (2003). "No room for heroes": Australian, pre-service teachers' responses to TGfU. In L. Griffin, J. Butler, R. Nastasi & B. Lombardo (Eds.), *Teaching Games for Understanding in Physical Education and Sport: An International Perspective* (pp. 67-78). Oxon Hill, MD, USA: National Association for Sport and Physical Education.

Light, R. (2004). Australian coaches' experiences of Game Sense: Opportunities and challenges. *Physical Education and Sport Pedagogy, 9*(2), 115-132.

Light, R. (2005). Implementing understanding approaches to teaching games and sport in Asia. *Asian Journal of Exercise and Sport Science, 2*(1), 39-48.

Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.

Melnychuk, N., & Robinson, D. (2008, May). *Experiences of preservice teachers with Teaching Games for Understanding*. Paper presented at the International Teaching Games for Understanding (TGfU) Conference, Vancouver, BC.

Ralph, E., Walker, K., & Wimmer, R. (2008). The pre-service practicum: Perspectives of students from three disciplines. *Higher Education Perspectives, 4* (1), 1-21.

Ralph, E.,Walker, K., & Wimmer, R. (2009). Deficiencies in the practicum phase of field-based education: Students' views. *Northwest Passage: Journal of Educational Practices, 7*(1), 74-86.

Randall, L. (2003). Preservice teachers' understanding of Teaching Games for Understanding approach to content delivery. *Avante, 9*(1), 49–61.

Randall, L. (2008). Implementing TGfU in the field. *Physical and Health Education Journal, 74*(2), 16-20.

Renzulli, J., Gentry, M., & Reis, S. (2004). A time and a place for authentic learning. *Educational Leadership, 62*(1), 73-77.

Stevens, C. (2008). *Service learning for health, physical education, and recreation*. Champaign, IL: Human Kinetics.

Tinning, R., Macdonald, D., Wright, J., & Hickey, C. (2001). *Becoming a physical education teacher: Contemporary and enduring issues.* Frenchs Forest, NSW: Pearson.

Turner, A. (2005). Teaching and learning games at the secondary level. In L.L. Griffin, & J.I. Butler (Eds.), *Teaching games for understanding: Theory, research, and practice* (pp. 71-90). Windsor, ON: Human Kinetics.

Werner, P. Thorpe, R., & Bunker, D. (1996). Teaching Games for Understanding: Evolution of a model. *Journal of Physical Education, Recreation & Dance, 67*(1), 28-33.

Wimmer, R. (2008). A multidisciplinary study of field experiences: Possibilities for teacher education. *Journal of Educational Thought, 42*(3), 339-351.

---

[1] This study was funded through a Service Learning Grant from St. Francis Xavier University.

[2] The use of Fisher's protected *t* (also referred to as LSD – least significant difference) as a post hoc analysis test is appropriate for this analysis (i.e., it does not increase the likelihood of Type I errors) as only three means were compared (see Howell, 2007).