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**Making physical education meaningful for girls:
Translating theory to practice**

*Comment intéresser les filles à l'éducation physique :
De la théorie à la pratique*

Sandra Gibbons
University of Victoria

Louise Humbert
University of Saskatchewan

Viviene Temple
University of Victoria

The purpose of this paper is to discuss the phases in a formative research process used to develop a resource manual to support teachers in their efforts to assist female students to find more meaning in physical education. Concepts drawn from the self-determination theory of motivation (Deci & Ryan, 1985, 2000) provided the theoretical framework for the manual. This theory suggests that motivation to engage in a particular behaviour is influenced by an individual's need for autonomy, competence, and relatedness. The authors describe how these concepts were used to help physical education teachers identify and utilize a wide range of curriculum actions and instructional strategies to address the motivational needs of their female students. The authors include extracts of how teachers are currently using the manual to document their practice and change in practice.

Cet article aborde les diverses étapes d'un processus de recherche formative ayant servi à mettre au point un guide pour appuyer les efforts des enseignantes et des enseignants qui désirent intéresser davantage les filles à l'éducation physique et les motiver à participer pleinement. Le cadre théorique du manuel s'inspire des concepts clés de la théorie motivationnelle axée sur l'auto-détermination (Deci et Ryan, 1985, 2000) selon laquelle la motivation à s'adonner à un comportement quelconque est influencé par le besoin d'autonomie, de compétence et de rapprochement qui anime la personne. Les auteures décrivent en quoi ces concepts ont aidé les enseignantes et les enseignants d'éducation physique à identifier et utiliser toute une gamme de mesures et de stratégies éducatives pour répondre aux besoins motivationnels des étudiantes. L'article renferme aussi des extraits qui expliquent en quoi les enseignantes et les enseignants utilisent maintenant le guide pour documenter et modifier leurs pratiques.

Introduction

Meeting the needs of female students in physical education [PE] continues to present a significant challenge to teachers. Despite the educational aim to help students develop the skills, knowledge, and behaviours necessary to be physically active, typical PE programs in Canadian schools are not realizing this aim for many female students, leaving them disillusioned and disengaged (Gibbons & Humbert, 2008; Gibbons, Wharf Higgins, Gaul, & Van Gyn, 1999; Humbert, 1995; Olafson, 2002, Vertinsky, 1992). However, from a more positive perspective, there is empirical support for a proactive approach to program development that has the potential to keep female students involved in PE. Researchers have identified characteristics of PE courses that have successfully attracted and engaged female students (e.g., Ennis, 1999; Felton et al., 2005; Fraser-Thomas & Beaudoin, 2004; Gibbons, 2009; Gibbons & Gaul, 2004; Humbert, 2006; Ward et al., 2006). For example, Gibbons (2009) identified the following six themes in her analysis of senior elective PE courses that successfully maintained a high enrollment of female students: (a) focus on lifetime physical activities, (b) student involvement in course development, (c) authentic assessment, (d) gender as a course design feature, (e) value added options, and (f) positive and respectful class environment. Felton et al., (2005) used the term "girl-friendly PE," to refer to the following seven characteristics: (a) gender separation opportunities in class, (b) students are physically active in class, (c) noncompetitive activities are offered, (d) lifelong physical activity is emphasized, (e) classes are fun and enjoyable; (f) appropriate instructional methods (including small groups) are used, and (g) behavioural skills for PE are taught. It follows that the more teachers build these characteristics into the PE program, the more likely female students will be motivated to continue the experience. With this in mind, development of a resource that guides teachers in the implementation of a range of curriculum actions and instructional strategies associated with the types of themes and characteristics identified by Gibbons (2009) and Felton et al. (2005) is timely. To guide development of such a resource, it is important to understand the motivational processes that may determine whether female students find meaning and become engaged in their PE experience or find the experience irrelevant and choose to disengage. Motivation has been identified as a key to both the initiation and continuation of physical activity.

To this purpose, the self-determination approach to motivation (Deci & Ryan, 1985, 2000) is particularly helpful. Self-determination theory [SDT] proposes a three-part model to describe how motivation develops and its influence on behaviour. This theory suggests that motivation is influenced by an individual's need for autonomy, competence, and relatedness. The tenets of this theory propose that individuals who perceive they are autonomous (having a sense of choice), competent (a sense of efficacy), and related (sense of social attachment) will be intrinsically motivated to engage in certain behaviour. Deci and Ryan (1985) suggest that different types of motivation are located along a self-determination continuum from amotivation, through extrinsic motives, to intrinsic motivation. Intrinsic motivation refers to engagement in activities for their own sake, with feelings of pleasure and satisfaction that derive directly from participation (Deci & Ryan, 1985). They propose that intrinsically motivated behaviour emanates totally from within the individual, in other words it is self-determined. In contrast, extrinsic motivation occurs when an individual participates in activity because they

value an associated outcome (e.g., prize) more than the activity itself. They further state that when needs for autonomy, competence, and relatedness are not met, an individual will experience a state of amotivation. Amotivation refers to a complete lack of volition toward the target behaviour. In other words, participation has little meaning for or value to the individual.

In turn, an individual's state of motivation influences behaviour, affect, and cognition. Deci and Ryan refer to these as the consequences of motivation and posit that individuals who are intrinsically motivated are more likely to engage in positive behaviour (e.g., increased involvement in physical activity), attitude (e.g. enjoyment), and cognition (e.g., greater understanding of relationship between exercise and health benefits).

Several studies provide empirical links between the precepts of SDT and different aspects of PE. For example, Ntoumanis (2001, 2005) utilized SDT to test a motivational model of participation in optional PE. Results showed a significant path from the satisfaction of the needs for autonomy, competence, and relatedness to intrinsic motivation. In turn, intrinsic motivation was significantly related to intention to enroll in optional PE. Ntoumanis, Pensgaard, Martin, and Pipe (2004) examined the major causes of amotivation as perceived by 14-15 year olds in a compulsory PE course. Results supported Deci's and Ryan's (2000) contention that if the needs of autonomy, competence, and relatedness are not met, amotivation will result. Findings also showed that amotivation in girls appeared as passive behaviour, whereas amotivated boys were disruptive. Although the preceding researchers applied aspects of SDT to existing PE courses, few have used SDT to manipulate curriculum and/or instructional practices in PE in order to examine possible causal relationships. To this end, Prusak, Treasure, Darst, and Pangrazi (2004) examined the effects of offering different types of choice (autonomy) in a walking unit on motivation of middle school girls. Results indicated that girls in the group with choice were more intrinsically motivated than girls in the no choice group. There is a paucity of research in PE on interventions that address all three antecedents.

Generally, the SDT concepts of autonomy, competence, and relatedness, with their relationships to motivation and subsequent impact on aspects of behaviour, affect, and cognition are valuable in helping to better understand the general PE learning environment. More specifically, they are instructive in the interpretation of various aspects of girls' PE experiences. In other words, if a PE course emphasizes development of girls' autonomy, competence, and relatedness, then they will be more intrinsically motivated to engage in meaningful participation in PE. It follows that SDT provides a promising framework for both the design of effective curriculum actions and instructional strategies, and the eventual measurement of the resulting outcomes.

While it is important to use a strong theoretical framework to conceptualize, organize, and consolidate actions that contribute to the meaningful participation of girls in PE, the formative process used in the development of the manual also has the potential to increase its utility and likelihood it will be used by teachers. The purpose of this paper is to describe the formative process used to develop the resource manual. Moe, Pickrel, McKenzie, Strikmiller, Coombs, and Murrie (2006) and Young et al. (2006) both describe the formative phase of research as critical to the eventual success of an intervention. Moe et al. contend that the intent

of this phase is to gather information that will allow an intervention to be both theoretically robust and adaptable to unique circumstances of individual schools.

The purpose of the formative phase in this study was to translate the major concepts of self-determination theory into concrete actions that teachers could implement to increase meaning in PE for their female students. The process used in the formative phase was grounded in several conceptual underpinnings of educational change. Ha, Wong, Sum, and Chan (2008) identify teachers as central figures in the educational change process, with the major responsibility to implement theory and/or policy into practice. As such, teachers should be actively involved and supported through the change process. Gibbons and Gaul (2004) emphasize that teachers bring vital knowledge of, and appreciation for, day-to-day practicalities of their subject, students, and school context. Utilization of this knowledge and acknowledgement of the limitations on a teacher's capacity to accomplish proposed changes is crucial in the process of making educational change. Fullan (1999) highlights the necessity of this reciprocal process in the integration of theory and practice. Therefore, involvement of teachers in this study was carefully considered and practiced in terms of maximizing their expertise, and nurturing a process that allowed for the ongoing integration of theory and practice.

Formative Research Process

This section presents the methodology used in the formative research process, including a description of the overall research project, the participants, and the activities involved in Phase 1 and Phase 2.

Overall Research Project

The formative process described in this paper is part of an overall project designed to increase the meaningful participation of female students in physical education at three target grade ranges (upper elementary (gr. 5-7), middle school (gr. 6-8), high school (gr. 9-12). This project included coordination sites at two large universities representing different provinces and populations in western Canada. Each coordination site was situated to draw from wide geographical areas and diverse populations. For example, Coordination Site 1 [CS1] is well situated to draw from culturally diverse urban and suburban schools. Coordination Site 2 [CS2] has a large population of Aboriginal people and access to rural school locations.

Participants

As the intent of the formative phase was to design a manual that could be utilized by physical education teachers in a wide range of school contexts, investigators from both coordination sites endeavored to include teachers that represented this range. Therefore, teachers were invited from schools representing the following contexts: three target grade ranges, rural/urban/suburban, school population (small/medium/large), socio-economic diversity, geographic locations (e.g. northern), cultural diversity, class grouping (e.g. single-sex/coeducational), timetable structures (e.g. semester/linear), and provincial education system (two provincial curriculum guides were represented). In addition, teachers who were already involved in implementing actions to increase participation of girls in PE or who had previously expressed interest were invited to participate. The office of research administration at the affiliated universities granted human ethics approval for this research.

Phase 1 Familiarization with theory and connecting to practice

All-day discussion and planning sessions with teachers were held at each coordination site (CS1=51 teachers; CS2=60 teachers). The purpose of these sessions was to (a) familiarize teachers with the self-determination theory of motivation and the three concepts – autonomy, competence, and relatedness, and (b) generate as many PE actions as possible associated with these concepts.

A slide presentation accompanied by a handout was used to familiarize the teachers with self-determination theory. This included definitions of the major concepts associated with self-determination (e.g., intrinsic motivation, autonomy, competence, relatedness), along with a visual model to show the relationship between these concepts. Briefly, the following statement was used to summarize self-determination: Individuals who perceive they are autonomous, competent, and have a sense of relatedness will be more intrinsically motivated to engage in a certain behaviour. As an introduction to the brainstorming exercise, examples of actions associated with each of the three self-determination concepts were provided to show teachers how to apply them to decisions they make in their physical education classes. For example, having students choose from a selection of physical activities as part of their PE program was described as action that contributes to building autonomy. Using icebreakers at the beginning of term to help students learn names and feel welcome in class was shown as an action that contributes to building a feeling of relatedness.

Following this familiarization session, teachers were placed in small discussion groups (5-6 per group) organized by grade ranges. Each group was lead by a facilitator who kept the discussion on task. Research assistants were assigned to each group to record the discussion. Both discussion facilitators and recorders were trained by the researchers for their specific duties and were otherwise not participants in the project. Small group brainstorming and completion of a specific factors grid were used during this discussion session to generate curriculum actions and instructional strategies associated with autonomy, competence, and relatedness. Following this session, in an effort to ensure that the list of actions was as comprehensive as possible, a scan of published recommendations and documented practice associated with increasing the meaningful participation of female students in PE was completed by the investigators to add any appropriate action that was not generated in the discussions. The following describes the purpose and organizational details of each of the exercises used to generate curricular actions and instructional strategies.

Small group brainstorming. Small group brainstorming exercise was utilized to generate as many actions as possible associated with the concepts of autonomy, competence, and relatedness. Participants were asked to brainstorm their actions in three categories including curriculum, learning environment, and assessment (see Table 1 for sample brainstorm recording chart).

Table 1

Sample Brainstorming Chart - Development of AUTONOMY (Sense of Choice)

A. Curriculum Actions (Autonomy)	Action Examples (specific as possible)
1. Using input from students to design course content	1. - We give a survey of physical activities at the beginning of each term - Students complete a reflection at the end of each unit, we use this information to make adjustments for subsequent units - We designate Friday's class as "choice day." Majority "rules." If a vote is close, the group with the lower vote, get to choose the activity the following Friday.
B. Learning Environment Actions (Autonomy)	Action Examples (specific as possible)
1. Provide choices in game play	1. - We provide three skill/competitive levels of game play in class. Students can move between different levels - We allow students to pick their own practice groupings as long as they work productively.
C. Assessment Actions (Autonomy)	Action Examples (specific as possible)
1. Provide choices in assessment	1. - In some units we give students choices in some skill assessment (e.g., in track & field students choose one of three throwing events) - We have three options in our leadership component (e.g., lead a warm up; lead a cool down; teach a minor game). Students choose one of the three.- In our daily heart rate activity, students have a choice between running, power walking, skipping, or step-ups.

Groups spent approximately one hour generating actions for each concept. At the end of the third hour, members from each group provided a brief summary of their group's discussion to the large group.

Specific factors grid. The purpose of the specific factors grid (see Table 2) was to identify practical factors (e.g., barriers) that have potential impact on the implementation of curricular actions or instructional strategies in any of the three concepts. This exercise also allowed each teacher to identify factors that may be unique to their own situation.

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Table 2

Specific factors that influence actions & strategies: Sample entries

	Autonomy (sense of choice)	Competence (sense of efficacy)	Relatedness (sense of social attachment)
Single-gender classes	- We are able to offer more lifestyle activities in single-gender	- Can provide more focused skill building activities	- Less complicated social environment!
Co-educational classes	- Girls tend to be less vocal willing to conform to keep the peace.	- Deal with stereotypic language (e.g., girl's push-ups)	- Fashion plays a role!
Cultural diversity	- One of our PE department goals has been to better inform parents of our international students	- Giving students with a different background the opportunity to introduce an activity popular in their culture	- Addressing language barriers that impact a sense of inclusion.
Socio-economic	- We work hard to make sure that access to practice opportunity is not limited by the ability to pay.	- Not exposed to certain activities before	- Finding $$ for activity attire, sneakers etc.
Administration	- Need to have administration supportive of alternative PE courses	- Qualified and skilled PE teachers	- Roles are shuffled in outdoor facilities as different skill sets emerge; often girls emerge as leaders.
Facilities/resources	- We struggle with providing transportation to community facilities.	- If students are more familiar with community facilities, they will be more apt to use them and become more skilled!	- Community fitness clubs can provide social attachment separate from the school.
Other	- Adjusting to changing requirements of Ministry of Education		

Scan of published recommendations and documented practice. The purpose of this technique was to identify and compile curriculum actions and instructional strategies recommendations from research papers and professional practice that focus on the three self-determination concepts and address meaningful participation of female students in physical education.

Following completion of both discussion and planning meetings, the information from brainstorming and the specific factors grid were transcribed and copies returned to all participants. Formative findings derived from the one-day discussion and planning sessions with teachers at each of the two coordination sites along with the scan of published recommendations were used to guide development of the resource manual.

Phase 2 Documenting practice

The purpose of Phase 2 was to design the resource manual and have teachers use it to document their practice for the duration of one or more PE courses. The first part of Phase 2 focused on organizing the information gained from Phase 1 into a form that could be used to help teachers document their practice and change in practice. The major intent of the resource manual was to provide a comprehensive list of actions in a format that was easy to understand and interpret, and convenient for teachers to use. A major design challenge was to incorporate a large amount of information into a format that wouldn't overwhelm the user. To this end, the information in the resource manual was organized into two parts (action checklists and action suggestions) for each of the three concepts: autonomy, competence, and relatedness.

Action Checklists. The purpose of the action checklists was to provide comprehensive documentation of the actions teachers implemented in their PE course(s) that coincided with the three parts of the self-determination model: autonomy, competence, and relatedness. The actions in each part were consolidated into several major categories accompanied by subcategories along with four check boxes, and a space to explain the action (see Table 3 for sample action checklist for autonomy)
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Table 3

Autonomy Action Checklist

Development of Autonomy (Sense of Choice)					
I. Utilize student input	Yes old	Yes new	No	N/A	Describe your actions here ⇩
a. Survey students about physical activity preferences					
II. Advocacy actions					Describe your actions here ⇩
a. Promote value of choice to administration					
b. Encourage administrators to timetable several same-grade sections in the same block					
III. Resource utilization (community and school)	Yes old	Yes new	No	N/A	Describe your actions here ⇩
a. Use available community resources					
b. Allocate some of the PE budget to non-traditional equipment					
c. Seek out community donations					
IV. Planning & timetabling actions	Yes	Yes	No	N/A	Describe your actions here ⇩

	old	new			
a. Balance exposure to higher cost activities with economic limitations (school/community/student)					
b. Promote courses early & often					
c. Examine scope & sequence across grades					
d. Provide students with <u>choice</u> between co-ed or single sex courses and/or classes					
V. Assessment actions	Yes old	Yes new	No	N/A	Describe your actions here ⇓
a. Provide some choice around what will be assessed					
b. Provide opportunity for regular self-assessment					
VI. Incorporate choice into practice/play opportunity	Yes old	Yes new	No	N/A	Describe your actions here ⇓
a. Provide competitive/non-competitive options and allow the students to choose between them					
b. Incorporate small choices in parts of the class					

VII. Choice in physical activity attire	Yes old	Yes new	No	N/A	Describe your actions here ⇓
a. Allow culturally appropriate clothing in physical education					
b. Provide guidance around "active wear" then provide choice					
VIII. Other actions to develop autonomy	Yes old	Yes new	No	N/A	Describe your actions here ⇓
a.					
b.					
c.					
d.					

In order to document the actions teachers implemented in their PE courses, they were asked to check one of four boxes for each action listed:

Yes/old: Check this box if you were already doing this action and are simply continuing existing practice.

Yes/new: Check this box if this is a new action that has been added.

No: Check this box if you do not have this action in your program (although it is possible).

N/A: Check this box if the action is Not Applicable to your course/program.

Beside the action box teachers checked, they were asked to provide as much specific detail such that another teacher can use their idea/actions. For example, if they used an interest survey, they were asked to include a copy of the survey where possible. It was anticipated that for many of the actions it was likely that teachers would be documenting actions they were already doing. For example, a teacher may already be using some form of student survey – in such case the teacher was asked to simply check the "old" box and describe these actions. For those actions in the checklist that were new to the teacher's program, they were asked to incorporate as many as possible (keeping in mind feasibility and sustainability). In other words, the goal was to add actions the teacher considered to be sustainable and not overwhelming. The action checklists were designed for teachers to visit and revisit as required, as it was considered likely that teachers would implement some of the actions in different ways throughout the term.

Action Suggestion Guides. Action suggestion guides were included after each of the three checklists to provide teachers with as many different ideas and examples as possible for how individuals have implemented some of the actions (see Table 4 for excerpt from action suggestion guide).

Table 4

Sample Action Suggestion Guide

ACTIONS	Suggestions
I. Utilize student input	
a. Survey student about physical activity preferences	Considerations for organizing student surveys: ▪ Find out what the students are interested in, what they've done before, what they want to do more of/less of ▪ Have students select from a list organized in categories of activities ▪ Ensure choices involve a range of types of activities (i.e. not only major games) ▪ Ensure student voices are heard e.g. survey and ask students to write down top 3 choices ▪ Pay attention to peripheral activities, boys may override girls choices via majority (e.g. don't depend on "majority rule") ▪ Consider ethnic background of the students in your class by overtly including examples on selection sheet for example. ▪ Challenge the perception of gender specific activities ▪ Generate the schedule cooperatively with students ▪ Provide choice within movement categories "choice within a choice" e.g. badminton or tennis, choice of dance – hip hop, jazz, line dance etc. ▪ Administer your own PE course evaluation to gather information from students and use this information to make changes, show students that you use their feedback ▪ Assess the existing PE curriculum to determine if it is meeting the needs of all students

The intent of these action suggestion guides was to provide teachers with options they may not have previously considered. As well, the action suggestions were included to provide clarification for some of the brief statements in the checklists. Teachers were advised to read through the action suggestion guides prior to and throughout the course as many of the items might spark their interest or in some cases jog their memory on actions that they implemented but didn't realize they should mention.

Using the Resource Manuals

Teachers were asked to use the action checklists and action suggestion guides in one or more of their PE classes over the course of a school year (September through May). Thirty-five teachers from CS1 and thirty teachers from CS2 volunteered to participate in Phase 2. Teachers received a hard copy of the resource manual in a three-ring binder, as well as an electronic version. Teachers were asked to complete whichever version was most convenient for them to use. Ninety-five percent of the participants completed the hard copy version of the manual.

Participating teachers in Phase 2 attended a full-day debriefing meeting toward the end of the school year. The purpose of this meeting was to gather information on the overall effectiveness and comprehensiveness of the action checklists and action suggestion guides in helping teachers document and make change in their teaching practice by implementing the actions associated with the self-determination concepts of autonomy, competence, and relatedness. As part of the debriefing process, teachers organized into small discussion groups (5-6 per group), accompanied by a facilitator and recorder. For the first part of the debrief session, facilitators made an overall numerical summary of the action check boxes. For the subheadings in each of the three sections, teachers were asked to indicate which box they checked. The purpose of this exercise was to get an indication of the overall number of actions that were implemented both from the "old" and "new" check boxes. On the whole, teachers checked either "old" or "new" for over 85% of the actions across the subcategories in autonomy, competence, and relatedness. These results provided promising support to the utility and practicality of actions across the diverse school contexts represented in the two coordination sites. The results also showed interesting insight into actions that teachers identified as already part of their practice ('old'), and actions they chose to add ('new'). There were some differences between the two coordination sites, as well as some strong consistencies. For example, in the autonomy subcategory of "provide opportunity for regular self-assessment," approximately 60% of teachers in CS1 indicated this as an action they were already using, and 24% checked it as a new action. In contrast, 48% of teachers in CS2 identified this action as part of their existing practice, and 43% indicated they added this as a new action. Another difference between the two coordination sites was evident in the relatedness subcategory of "include cooperative games and teambuilding activities," with 64% of teachers in CS1 indicating that they were already using this action, compared to 86% of teachers in CS2. In terms of consistencies, 68% of teachers in CS1 and 71% of teachers in CS2 identified the competence subcategory of "provide opportunities for students to teach others" as already part of their regular teaching practice ("old"). As well, 56% of teachers in CS1 and

48% of teachers in CS2 identified the autonomy subcategory of "allocate some of PE budget to nontraditional equipment" as a new action.

The second debriefing task focused on asking teachers to identify up to three "high impact actions" for each of autonomy, competence, and relatedness. High impact actions were defined as those actions each teacher considered to make the most impact on the particular self-determination concept. The purpose of this task was to get an indication of the actions teachers thought made the most difference. In doing so, this information may provide insight for future actions and recommendations. At the end of this task, members from each group provided a brief summary of their group's discussion to the large group.

In summarizing the high impact actions across all the discussion groups, some consistent actions were evident in each of the three components. In autonomy, teachers identified (a) survey students about physical activity preferences; (b) use available community resources; and (c) allocate some of PE budget to nontraditional equipment, as the three actions with the highest impact. In the competence component, (a) include activities to improve health-related fitness; (b) provide opportunities for students to teach others; and (c) be an active role model were identified as the top three high impact actions. The three actions in the relatedness component with the highest impact were (a) include cooperative games and teambuilding activities; (b) create a safe and respectful environment; and (c) explore physical activity opportunities in the community.

The final debriefing task asked teachers to identify two "lessons learned" for each of the three concepts. Lessons learned were described as challenges, things they would do differently next time, and/or pleasant surprises. The purpose of this task was to encourage teachers to share unique insights that perhaps may not have been directly related to the concept, but proved important in the overall implementation process. In the autonomy component, teachers identified the importance of "promoting the value of choice to administrators." They highlighted the lesson learned as a reminder that the preceding action required the establishment of a strong and ongoing communication process. A second action in the autonomy component emphasized the ongoing logistical challenges of using community facilities, with lesson learned being the continuing need to nurture relationships with community organizations. In the competence component, two actions associated with quality teaching practice were highlighted: (a) check for scope and sequence across grade levels, and (b) work toward mastery. In their description of the lesson learned, teachers discussed the importance of attending to these two actions and the consequences if these actions are neglected. The two actions in the relatedness component were the inclusion of cooperative games and teambuilding activities, and exploration of physical activity opportunities in the community. The lesson learned in both actions focused on finding ways to implement these as ongoing actions throughout the term rather than as isolated or one-shot events.

Teachers also submitted their resource manuals to the investigators for further analysis (see excerpts from a completed manual in Table 5).

Table 5

Excerpt from completed Autonomy Action Checklist

Development of Autonomy (Sense of Choice)					
I. Utilize student input	Yes old	Yes new	No	N/A	Describe your actions here ⇓
a. Survey students about physical activity preferences		☺			This was an ongoing practice in the class. They new I wanted them to try new things, but they also knew that their opinions and suggestions were always valued and an integral part of our weekly schedule.
II. Advocacy actions					Describe your actions here ⇓
b. Promote value of choice to administration		☺			Spoke to PE department and department head, counseling department head and Principal. I am very lucky that all were and still are supportive of the 11/12 class, and now the gr. 10 alternative class. They all saw the need to increase female participation in senior PE.
c. Encourage administrators to timetable several same-grade sections in the same block				☹	
III. Resource utilization (community and school)	Yes old	Yes new	No	N/A	Describe your actions here ⇓
b. Use available community resources		☺			YES!! We used our neighbouring community centers 8 times (with a guest instructors), Bikram Yoga, skating rink etc. All were very supportive and cheap!

Investigators analyzed the teachers' entries in their manuals for new actions and made adjustments in the overall organization of the manual in order to increase clarity and comprehensiveness. Given that the intent of the manual was both to have teachers document their practice with the checklists and provide them with ideas in the action suggestion guide, it was important to identify new actions that teachers successfully implemented. As part of this analysis, over forty new action suggestions were identified and added to each of the three self-determination components. For example, in the autonomy subcategory "promote PE course early and often," one teacher designed a brochure to promote the different PE options, and gave copies of this brochure to school counselors for use in course selection.   As well, in the competence subcategory "provide opportunities for students to lead others," another teacher provided the opportunity for older students to plan and offer a "girl blast activity," described as a day of physical activities that girls love. An example of a new action added in the relatedness subcategory "learn about self and others," was one teacher's use of a contest at the beginning of each term that focused on all students and the teacher knowing the names of everyone in class. Following the addition of new actions, an electronic version of the updated resource manual was sent to all participants in Phase 2.

Implications for Research and Professional Practice
The purpose of this paper is to discuss the phases in a formative research process used to develop a resource manual to help teachers make physical education more meaningful for their female students. Both the resulting manual and the process used in it's development provide teachers with much needed support in their efforts to implement actions that will gain and hold the interest of female students. In addition, it emphasizes the valuable contribution this phase of the research process makes to the overall integrity and fidelity of an intervention.

The formative process used in this study and resulting manual has several implications for both advancing professional practice and research. Specifically, the process provided valuable insight into concrete actions for increasing participation of female in students in PE, and more generally for increasing the potential for successful educational change. This formative process involved the implementation of a school-based initiative developed through active collaboration between researchers and teachers. While the researchers brought the theoretical expertise to the project, the teachers possessed the experiential knowledge critical to implementing theory into practical action within the contexts of their individual schools. The teachers were able to utilize the theory and more specifically implement actions associated with the three components of self-determination (autonomy, competence, relatedness). In short, this process reduced the potential for disconnection between theory and practice. This process and resulting resource supports the assertion by Ha et al., (2008) that teachers are central figures in educational change and as such must be supported through the change process. In this case, active collaboration between teachers and researchers allowed for self-determination to be applied in a meaningful way in school contexts resulting in actions that made PE programs more inviting and meaningful for female students and increasing the potential for their participation in the future.

In addition, the formative process created a strong community for nurturing and advancing professional practice. The teachers involved in both phases of the formative process were enthusiastic, very willing to share resources, and most importantly willing to share solutions to challenges. They felt supported and confident that their contributions to the formative process were valued.

Finally, the structure and content of the resource manual provided a consistent guide for teachers in the implementation of actions consistent with the self-determination theoretical framework. It helped teachers integrate new actions within their individual context, allowing for adaptation across different circumstances while maintaining integrity of theoretical framework. In particular, having teachers work with the manual in Phase 2 was critical to strengthening the theory to practice connection. This process of having teachers provide details of their actions generated over 120 additional ideas for the action suggestion sections in autonomy, competence, and relatedness. This result supports the contention by Moe et al. (2006) and Young et al. (2006) that this type of formative process is necessary in order to build consistency across different school contexts, which is an unavoidable circumstance in larger school-based interventions. Overall, we believe that this type of formative research process can contribute to quality practice in the implementation of theory-based initiatives in schools.

References

Deci, E. & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

Deci, E. & Ryan, R. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.

Ennis, C. (1999). Creating a culturally relevant curriculum for disengaged girls. *Sport, Education and Society, 4*, 31-49.

Felton, G., Saunders, R., Ward, D., Dishman, R., Dowda, M., & Pate, R. (2005). Promoting physical activity in girls: A case study of one school's success. *Journal of School Health, 75*(2), 57-62.

Fraser-Thomas, J. & Beaudoin, C. (2004). Girls' appreciation of new physical education curriculum classes. *Avanté, 10*(2), 45-56.

Fullan, M. (1999). *Change forces: The sequel*. Philadelphia, PA: Falmer Press.

Gibbons, S.L. (2009). Meaningful participation of girls in senior physical education courses. *Canadian Journal of Education, 32*(2), 222-244.

Gibbons, S.L. & Gaul, C.A. (2004). Making physical education meaningful for young women: Case study in educational change. *Avanté, 10*(2), 1-16.

Gibbons, S.L. & Humbert, M.L. (2008). What are middle-school girls looking for in physical education? *Canadian Journal of Education, 31*(1), 167-186.

Gibbons, S.L., Wharf Higgins, J., Gaul, C.A., & Van Gyn, G.H. (1999). Listening to female students in high school physical education, *Avanté, 5*(2), 1-20.

Ha, A., Wong, A., Sum, R., & Chan, D. (2008). Understanding teachers' will and capacity to accomplish physical education curriculum reform: The implications for teacher development. *Sport, Education and Society, 13*(1), 77-95.

Humbert, M.L. (1995). On the sidelines: The experiences of young women in physical education classes. *Avanté, 1*(2), 58-77.

Humbert, M.L. (2006). Listening for a change: Understanding the experiences of students in physical education. In E. Singleton & A. Varpalotai (Eds.), *Stones in the sneaker: Active theory for secondary school physical and health educators* (pp. 1-25). London, ON: Althouse Press.

Moe, S., Pickrel, J., McKenzie, T., Strikmiller, P., Coombs, D., & Murrie, D. (2006). Using school-level interviews to develop a multisite PE intervention program. *Health Education & Behavior, 33*(1), 52-65.

Ntoumanis, N. (2001). A self-determination approach to the understanding of motivation in physical education. *British Journal of Educational Psychology, 71*(2), 225-242.

Ntoumanis, N. (2005). A prospective study of participation in optional school physical education using a self-determination theory framework. *Journal of Educational Psychology, 97*(3), 444-453.

Ntoumanis, N. Pensgaard, A., Martin, C., & Pipe, K. (2004). An idiographic analysis of amotivation in compulsory school physical education. *Journal of Sport & Exercise Psychology, 26*, 197-214.

Olafson, L. (2002). I hate phys. ed.: Adolescent girls talk about physical education. *The Physical Educator, 59*, 67-74.

Prusak, K., Treasure, D., Darst, P., & Pangrazi, R. (2004). Effects of choice on the motivation of adolescent girls in physical education. *Journal of Teaching in Physical Education, 23*(1), 19-29.

Vertinsky, P. (1992). Reclaiming space, revisioning body: The quest for gender-sensitive physical education. *Quest, 44*, 373-396.

Ward, D., Saunders, R., Felton, G., Williams, E., Epping, J., & Pate, R. (2006). Implementation of a school environment intervention to increase physical activity in high school girls. Health Education Research, 21(6), 896-910.

Young, D., Johnson, C., Steckler, A., Gittlesohn, J., Saunders, R., Saksvig, B., Ribisl, K., Lytle, L., & McKenzie, T. (2006). Data to action: Using formative research to develop intervention programs to increase physical activity in adolescent girls. *Health Education & Behavior, 33*(1), 97-111.