2014

ASSESSMENT & EVALUATION IN PHYSICAL EDUCATION: MAKING IT WORK FOR STUDENTS & TEACHERS

Brigitte S. Webster
Wilfrid Laurier University, Brigitte.Webster@wcdsb.ca

ASSESSMENT & EVALUATION IN PHYSICAL EDUCATION:

MAKING IT WORK FOR STUDENTS & TEACHERS

by

Brigitte Webster

THESIS

Submitted to the Faculty of Education

in partial fulfillment of the requirements for

Master of Education

Wilfrid Laurier University

Abstract

Physical Education must assume a stronger role in elementary schools. Rising childhood obesity, exceptional family dynamics and increases in screen time are factors in students' sedentary lifestyles. As a result, curriculum delivery and assessment and evaluation techniques have come under examination. This thesis evaluates the Feedback in Physical Education Tool (FPE Tool), designed for teachers to use when evaluating students in Physical Education. Increasing communication and supporting the development of self-regulated learners were the primary aims. Three elementary educators (Gr. 4, 5 & 6) and sixty-nine students in a mid-sized, urban elementary school volunteered to use the FPE Tool for three months. In individual interviews, teachers acknowledged the need to develop evaluation techniques in Physical Education on par with other subjects but lack of time was seen as a barrier. Evaluating the FPE Tool was somewhat problematic, as the Tool was not used as intended. Results from student surveys indicated that although some students found the FPE Tool confusing, others found feedback from their teachers, setting of goals, and the opportunity for self-evaluation to be helpful. Quantitative data indicate a decrease in students' perceptions of their skill levels between Grades 4 and 6. This conclusion guides the direction for future research.

Acknowledgements

First, I must thank the educators and the principal who voluntarily agreed to be a part of this research. Their insights, opinions and willingness to share their time, space, and ideas were paramount in completing this project. I appreciate the Waterloo Catholic District School Board for approving the course of this research, as well as the parents for allowing their children to participate and the students for so willingly taking part in this thesis.

A special thank you to my advisor, Dr. Julie Mueller, for having such an avid interest in a field that requires so much attention. I appreciate your patience, guidance and the occasional "talk down from the tree" panic conversations that have stayed the course of this research over time. I would also like to recognize Dr. Dawn Buzza for sharing her wisdom and insights throughout the many drafts that came her way. Finally, to Dr. Mark Eys for graciously agreeing to be the external committee member throughout this process and for providing me with new space to think about Physical Literacy.

Most importantly, I absolutely could not have completed this thesis without the support of my husband, Roly and our two children, Riley and Brynn. There were many late nights out, tears and fears along the way. Your unconditional support, encouragement and love made this possible.

Table of Contents

List of Tables

List of Figures

List of Appendices

Assessment and Evaluation in Physical Education: Making it Work For Students and Teachers

Physical and Health Education may be more important now than ever before. Children today are more sedentary and overweight than ever (Al-khalidi, 2013). With more options available for screen time (video games, television, computers), more two parent working families, rising costs for organized recreational and competitive sport, and more parents afraid to let their children play outside until the street lights go on, we have a generation of kids who are less physically active than ever before.

A packed and prescriptive curriculum in Mathematics, Language, Science, and Social Studies only compounds this problem. Teachers must prioritize where their time should be spent when planning, teaching and evaluating lessons in each of these areas and often times, in others too. In elementary schools today, generalist teachers, who are expected to have knowledge in many different disciplines, teach Physical Education classes. Physical Education specialists are more often than not, directed to the high school system. Between an overloaded curriculum and a lack of specially trained Physical Education teachers, providing programming and assessment and evaluation methods that are similar to those offered in Mathematics and Language, becomes more difficult.

Rink and Mitchell's 2003 monograph on the state of Physical Education in South Carolina originally inspired the course of this research. It was their contention that as much as elementary school physical educators have an uphill battle to climb, it is also physical educators who have themselves to blame. Rink and Mitchell suggest that for Physical Education, as a discipline, to gain the support of the public and policy makers,

physical educators must provide the empirical research to support its validity and inclusion. To be a part of the change, we must be the agents of change if Physical Education is to be recognized as an important curriculum discipline. Physical Education should include recognized best practice in assessment and evaluation while supporting emerging strategies that engage self-regulated learners.

Social Cognitive Learning Theory

Current cognitive learning theories present the learner as an active participant in the process of constructing knowledge. Social cognitive theory emphasizes the impact of social learning, with a focus on oneself in terms of motivation, strategic action and metacognition (Bandura, 1986). In essence, students learn through observation. This theory postulates that learning occurs through performance, observation, listening to instructions, and by engaging with print and/or electronic influences (Schunk, 2012). Students see it, they hear it, they attempt it and then they reflect on it.

According to social cognitive learning theory, a viable model is a powerful tool educators have which can aid student learning. This is particularly true as students learn new motor skills. When influenced by a model, visual and/or auditory information is received and processed, in turn impacting subsequent attempts by the learner (Schunk, 2012). A significant consideration to address is the weight the learner places on the influence of the model. Factors such as the prestige and competence of the model are particularly important. If the learner believes the model to be an expert at the skill, the learner is more likely to be influenced and motivated by the model (Schunk, 2012).

When considering the underpinning of social cognitive learning theory and its value in the development of the intervention tool used for this thesis, the connections

between self-regulation, self-evaluation, and self-efficacy are important. Goal setting is an essential piece of an individual's self-efficacy.

Self-Regulation

Self-regulation falls under the social cognitive theory umbrella and considers the student's element of *choice* in the learning process. By bringing *choice* into the students' learning cycle, it is possible to affect their commitment to goal setting (Home & Murphy, 1985; Locke, Frederick, Lee, & Bobko, 1984; Morisano, Jacob, Peterson, Pihl & Shore, 2010; Schunk 1985).

Self-regulation refers to the process whereby active involvement with the learning process is specifically facilitated through the use of controlled thoughts, feelings and actions. Winne and Perry (2000) describe self-regulated learners as those who are metacognitive, intrinsically motivated, and strategic. The active use of these domains affects goal setting and is a key component of self-regulation (Zimmerman, 2000) and motivation (Bandura, 1986, Kanfer & Kanfer, 1991; Zimmerman, 2000). Goals are an important element within self-regulation as they offer objectives students are trying to attain and standards in which they are trying to assess their progress against. If students feel efficacious about accomplishing the goals they set, they may engage in more self-regulating behaviours to achieve these goals.

In order for students to use goal setting as motivated contributors to the learning process, self-regulated learners must be able to accurately assess their strengths and weaknesses. As such, students must participate in the assessment process and teachers must provide timely, specific and valid feedback. If students do not know what their abilities are and where opportunities for improvement exist, the motivation to adjust their

actions can be low. Additionally, research has suggested that self-regulated learners believe that challenging tasks, practice, deeper understanding of subject matter and degree of effort all affect potential academic success. (Perry, Phillips & Hutchinson, 2006). When examining the role self-regulation plays in this study, self-evaluation, self-efficacy, and goal setting must also be considered.

Self-Evaluation

Self-evaluation refers to the ability of someone to make judgments about personal performance, traits, qualities, and/or skills. This requires that an individual compare a personal goal that has been set against a previously established standard (Schunk, 2012). Students who make positive evaluations about themselves are more likely to feel successful about their learning and will be motivated to work hard as they think they are able to continue acquiring new knowledge and/or skills (Schunk, 1991). Physical educators have more recently investigated this concept in relation to physical activity.

Self-Efficacy

The effectiveness of self-regulation is largely determined by an individual's self-efficacy. A person's belief about their ability to succeed in a given situation defines their self-efficacy (Bandura, 1997). Research supports the connection between self-efficacy and a variety of achievement situations (Bandura, 1993; Caprara et al., 2008; Pajares, 1996, 1997; Perry & VandeKamp, 2000; Poag-DuCharme & Brawley, 1993; Schunk, 1990, 1991). Specifically, it has been established that students may evade attempting tasks if their self-efficacy is low (Perry & VandeKamp, 2000). Teachers need to find ways early on, to identify students with low self-efficacy so that intervention can take place. The positive correlation between self-efficacy and self-regulation and the need for

an effective evaluation and assessment tool, is the basis for the social cognitive theory being the foundation for the intervention in this research, which is the Feedback In Physical Education Tool (FPE Tool) (See Appendix A).

Feltz, Landers, and Raeder (1979) were some of the early researchers in the field of self-efficacy. They used 60 inexperienced college aged, females to successfully determine that self-efficacy levels can influence motor skill acquisition (1979). Lee (1982) examined self-efficacy with 14 female gymnasts between the ages of 7-12 to establish the same conclusion. More recently, Wright & O'Halloran (2013) studied the acquisition of some fundamental movement skills (putting, bouncing & kicking) while using a tennis ball. Ninety-six male and female university students between the ages of 18 - 55 (*M* = 24.88) were studied in Australia. A positive correlation was established between self-efficacy and task performance. These studies span a wide time frame and include populations across ages and genders.

Goal Setting.

Success in acquiring new skills has been clearly linked to goal setting. Edwin Locke was the first to correlate a positive relationship between goal setting and performance (1968). Student perception of their skill development and self-efficacy is largely affected by the goals they set and any succeeding performance attempted (Bandura, 1997; Locke & Latham, 1990, 2002; Schunk 1990).

Students, however, must set goals that are achievable, measureable, and timely. In order to do this, learners must have an accurate assessment of their own abilities and knowledgeable teachers around them who provide feedback that is developmentally appropriate should largely influence this. This feedback process enables a teacher to

refocus a child onto goals that are appropriate. Students sometimes set performance goals that are somewhat unrealistic, which in turn may lower self-efficacy. If a teacher can keep a child's focus on process goals and direct feedback that keeps goal setting rooted in development rather than results, those students who suffer from lower self-efficacy in Physical Education may experience more positive results thereby progressively contributing in part to an increase in self-efficacy.

There are a variety of different types of goals however, self-set goals are of primary interest to this study. Research substantiates that students who set their own goals are more likely to have a higher self-efficacy (Schunk, 1985). Goal commitment and increased confidence are two suggested reasons why a positive relationship is observed (Schunk, 1985). The inverse relationship is particularly demonstrated in students who have low achievement motivation (Hom & Murphy, 1985).

Self-efficacy becomes significant to the goal setting theory for a variety of reasons. Those with high self-efficacy typically encounter more success with achievement outcomes than those with lower self-efficacy (Pajares & c, 2001; Perry & VandeKamp, 2000). Moreover, in learners with high self-efficacy, commitment to goals assigned by others is stronger, paths to achieve their goals involve effective strategies, and they also are more likely to respond to negative feedback with a more positive attitude (Lock & Latham, 1990). Finally, when goals are set by people themselves, those with high self-efficacy are more likely to set higher goals than those with lower self-efficacy (Locke & Latham, 2002). Having students create their own goals and experience positive self-evaluations means students are likely to develop higher self-efficacy (Schunk, 1991).

Perhaps most significantly, previous research shows that self-efficacy levels can predict skill acquisition and motor skill performance (Bandura, 1997; Feltz, Landers & Raeder; 1979, Lee, 1982; Schunk & Hanson, 1985; Schunk & Rice, 1987; Schunk & Swartz, 1993a, 1993b; Wright & O'Halloran, 2013; Wurtele, 1986). These outcomes are especially relevant in Physical Education. If educators can work to increase the skill level of struggling Physical Education students, it might also be logical to anticipate an increase in self-efficacy in a student who identifies lower on the continuum.

This research seeks to establish that a student who believes that their motor skill development is appropriate for their age will have higher self-efficacy and in turn have stronger motivation levels, a deeper commitment to their goals, and established self-regulation habits with respect to physical activity. Therefore, self-efficacy considerations must become corner stones in comprehensive Physical Education programs. Creating an opportunity for students to participate in the assessment and evaluation process is one avenue towards having a positive influence on their self-efficacy levels.

Assessment

The foundation of good assessment and evaluation is the interdependence of instruction, curriculum and assessment (Wiggins & McTighe, 2011). When designing the outcomes of educational programing, end goals must include students' ability to make inferences about, and apply gained knowledge in new situations.

Diagnostic and formative assessments are used to gather information for teachers and students. Diagnostic assessments take measure of a students' prior knowledge on a given subject and allows teachers to assess areas of need and to program accordingly. Formative assessment provides teachers and students with feedback on progress made

thus far. Summative evaluations are a reflection of new learning gained that would either confirm previous schema or require a reorganization of prior knowledge (Ontario Ministry of Education: Growing Success, 2010; Wiggins & McTighe, 2011, Bloom 1968).

Michael Scriven initially coined the terms formative and summative evaluation in 1967. Benjamin Bloom (1968) brought the term into the educational field and focused on how teachers could improve the teaching-learning process for students. In the 2010 Growing Success Document, the Ontario Ministry of Education moved to adopt new language used in empirical research studies to define and expand these constructs. Diagnostic assessments have become known as *"Assessment for Learning"*, formative assessments have become, *"Assessment as Learning"* and summative evaluations changed to, *"Assessment of Learning"*.

Formative assessment and its ties to formal feedback and subsequent goal setting within self-regulation frame the present research. Black and William (1998) completed a meta-analysis of 250 scholarly research articles written between 1988 and 1998 revealing, "feedback produced significant benefits in learning and achievement across all content areas." (p. 204). In addition, producing feedback that is relevant and informative requires that teachers have concrete data about how students have developed over the course of time. Teachers need to be reviewing and reflecting on the data as this supports the development of self-regulation in students (Hopper, Butler & Storey, 2009; Nicol & Mcfarlane-Dick, 2006). The Feedback in Physical Education (FPE) Tool created for the purpose of the current study builds on Black and Williams' (1998) conclusions, specifically in the discipline of Physical Education. It generates a trail of anecdotal data,

which teachers can use to provide formative and summative feedback to their students, which is specific and individualized. This kind of evidence assists with continued goal setting and an increase in self-efficacy, which in turn, positively influences self-regulation.

Assessment in Physical Education

Formative and summative assessment from knowledgeable teachers is especially important in Physical Education. Students receive immediate feedback in Physical Education when participating in class. Skills are attempted and the participant knows results immediately due to direct observation. The problem lies in defining success. Young students may focus solely on product goals rather than process goals. In turn, self-efficacy may decrease because they have incorrectly labeled themselves incapable, due to misplaced value. Knowledgeable adults must be a part of the assessment and evaluation process so the immediate natural feedback students receive may be put into correct perspective.

If Physical Education is to be considered an important curriculum content area then assessment needs to follow best practice that includes formal and timely teacher feedback. Physical educators must invest in the same kind of pedagogical development as other academic disciplines in order to maintain its relevance with policy makers and funding allocations. Results need to be measureable and documented. Research needs to show improvement in physical literacy and skills as well as academic standards.

Additionally, Physical Education programs that link assessment and evaluation with established standards (learning goals) demonstrate an increase in skill learning and effort (James, Griffin & France, 2005). Unfortunately the deemphasizing of Physical

Education has been attributed in part to a lack of emphasis on valid assessment and evaluation tools used by educators that are linked to curriculum guidelines (Hay & Macdonald, 2008; Henninger & Carlson, 2011; MacPhail & Halbert, 2010; James, Griffin & France, 2005; Matanin & Tannehill, 1994; Veal, 1988).

Research conducted by James, Griffin and France (2005) with 46 Grade 4 students in two separate classes in the same school, suggests that if teachers put more emphasis towards aligning assessment and evaluation tools in Physical Education with NASPE standards (National Standards for Sport and Physical Education), elementary students are more likely to place more importance on skill learning and effort. NASPE standards have been established to provide Physical Education teachers with content and performance standards that provide direction as well as accountability in the United States (NASPE, 1995). The teacher in this study had 12 years of experience and was identified as a Physical Education teacher. Students completed a 10-question Likert-type scale attitude questionnaire; formal and informal interviews were conducted; journals were kept; and observation sessions in classes were conducted. Results indicated that both teachers and students perceived the teaching-learning process was improved when the criteria for assessment in Physical Education classes was communicated with students. Students shared that the standards served as a form of accountability for them which in turn, resulted in students placing more importance on skill learning and effort. This becomes relevant because researchers have concluded that increased effort can enhance skill development (Veal & Copagnone, 1995).

According to the Ontario Health and Physical Education Curriculum document (2010), if skill is not acquired, youth suffer a fear of failure, leading them to withdraw

from physical activity thereby decreasing their rates of overall participation. This also shows that the formalized process of assessment and evaluation in Physical Education is an important one. A priority for Physical Education programs must be to develop life-long active citizens, with high self-efficacy about their physical competencies. This should lead to higher motivation levels and increased commitment to healthy lifestyles rooted in physical activity. For Physical Education to continue to be viable in the education field, consideration to these conclusions needs to be given. (Henninger & Carlson, 2011).

Physical educators need to re-evaluate how assessment and evaluation tools used in the classroom to provide students with feedback and valid grades, can also be user-friendly for teachers in tracking students' progress to inform future programing. The FPE Tool is intended to do that. The FPE Tool facilitates an ongoing, formalized conversation between the student and teacher that provides concrete evidence for teachers to draw upon to assist with further programing as well as the assessment and evaluation process. Successful outcomes in Physical Education will assist the process of creating lifelong participants in physical activity. At this point in the research, there is limited examination of the tools available for assessment and evaluation of physical skills and movement competence in junior aged students (Grades 4-6).

Feedback in Physical Education Tool (FPE Tool) Development

According to the Ontario Health and Physical Education Curriculum (2010), a Physical Education program should consider three comprehensive elements (a) Active Living including: Active Participation, Physical Fitness and Safety, (b) Movement Competence including; Movement Skills and Competence as well as Movement

Strategies, and (c) Healthy Living. For the purpose of this tool development, consideration will be given to the Active Living and Movement Competence domains. The Healthy Living strand deals with general health concepts such as smoking, alcohol, drug use and healthy eating habits. While important to a comprehensive and well-rounded Physical Education program, the Healthy Living strand will not become a part of the tool being developed for this purpose.

The Active Living strand in the Health and Physical Education document contains expectations that should be evaluated at all times throughout the year. It includes expectations that require the student to regularly participate in Physical Education classes as well as the ability to demonstrate safety skills for themselves and others when participating in all activities. As a result, ongoing evaluation of the Active Living strand is necessary. Any instrument created must evaluate these expectations on a regular basis.

The Movement Competence strand is included in this tool as there must be a way for teachers to evaluate students' fundamental movement skills and the application of these skills in a variety of situations. Physical and Health Education Canada (2009) published a resource for physical educators identifying important fundamental movement skills and providing a description of the mature movement pattern for each. They include specific characteristics of each movement, cue words to use during instruction, some sample activities to use when teaching as well as detailed checklists for teachers/coaches to use to assess their students/athletes. While incredibly detailed and useful, a potential drawback to its widespread use are the details contained within the document. They are perhaps too comprehensive, especially for most elementary school teachers who are not Physical Education specialists. For example, the checklist for technical "components"

when evaluating overarm passing contains 19 different items (See Appendix B), for rebounding a ball there are 12 items and for shooting a ball with the hand there are 17, things a teacher should evaluate. While interesting, if used as a primary teaching tool in an elementary school system, it is suspected that the sheer number of particulars could become overwhelming for 9-12 year olds and for generalist teachers with no Physical Education background, in turn, creating an intimidating and de-motivating learning environment.

Examining Physical Education assessment and evaluation tools from a physical fitness perspective is a key aspect of empirical research in the discipline of Physical Education to this point (Welk, 2008; Welk & Wood, 2000; Scruggs et al., 2003; Rowlands, Eston & Inglewdew, 1997). Data were collected linking physical fitness levels to continued physical activity (Shephard & Trudeau, 2008; Welk, 2008).

Assessment and evaluation tools in Physical Education must not only reflect measured outcomes with respect to fitness, fundamental movement skills, and movement competencies but they must also consider formative feedback given by teachers as well as goal setting and self-evaluation completed by students in order that these goals can be addressed.

Tool Design

Much discussion has taken place in the Physical Education field with respect to the emphasis that should be placed on teaching and evaluating fitness skills, fundamental movement skills (e.g., throwing, catching, striking) and using game-like situations to develop and evaluate basic skills. While the purpose of this paper is not to evaluate each

teaching method, consideration needs to be given to the debate when developing methods of assessment and evaluation.

Physical Education is rooted in fitness and fundamental movement skills yet knowledgeable educators are challenged to create lifelong, physically literate, and active people though game instruction. Fitness assessment easily dominates existing published research. Effective Physical Education programs need to develop programing and evaluation methods that include all three aspects (fitness, fundamental movement skills, and game play) as a part of their make up.

Desrosiers, Godbout, and Genet-Volet (1997) conducted research tracking experienced Physical Education teachers with a vested interest in assessment practices. Thirteen teachers participated in the study over a two-year span. Results indicated that only 34% of the assessment instruments used by these experienced Physical Education teachers considered both the process as well as the product aspects of performance and only 20% of the instruments used took both technical and tactical aspects of skill development into account.

When creating programing and in turn, assessment and evaluation tools, teachers must consider how to address skill development in a variety of situations. As an example, the Grade 5 Ontario curriculum asks teachers to teach and evaluate students' ability to, "perform controlled transfers of weight in a variety of situations involving static and dynamic balance, using changes in speed and levels, with and without equipment" (p. 139). To address this curriculum expectation, teachers must develop programs that consider this expectation across multiple sports, at a variety of times, in a manner that provides students with the opportunity to demonstrate their skill in isolated

as well as applied situations. Passing a soccer ball back and forth with a partner in a drill-type situation (Movement Skills & Competence) is a different skill than working with teammates to pass the ball in open spaces, on a soccer field with accuracy, moving towards the opponent's goal while evading defenders (Movement Strategies). These are two different skills that need to be evaluated. Credit must be given to the student able to complete the skill in isolation. However, the student who can complete the pass in an applied situation has developed further along the continuum of skill development and application and this must be recognized.

The primary purpose of assessment and evaluation is to improve student learning and measure the overall effectiveness of programs and classroom practices. (Ontario Ministry of Education: Growing Success, 2010; Ontario Curriculum in Health and Physical Education, 2010; Wiggins & McTighe, 2011). Teachers are mandated to use assessment and evaluation practices that, amongst other things, "(a) are based both on the categories of knowledge and skills and on the achievement level descriptions given in the achievement chart, (b) are varied in nature, administered over a period of time, and designed to provide opportunities for students to demonstrate the full range of their learning, (c) ensure that each student is given clear directions for improvement, and (d) promote students' ability to assess their own learning and to set specific goals" (Ontario Curriculum in Health and Physical Education, 2010, p. 34 & 35). Considering these requirements, a comprehensive tool for assessment and evaluation in Physical Education should include: learning goals; self-assessment opportunities, frequent, descriptive feedback opportunities from teachers for students; and be flexible enough to evaluate students in both basic skill assessment and a variety of applied situations.

The Ontario Curriculum very specifically identifies the need for children to develop fundamental movement skills in Physical Education classes. This document outlines that,

> "without the development of fundamental skills, many children and youth choose to withdraw from activity due to fear of failure, self-consciousness, or lack of ability to move efficiently. Learning fundamental movement skills and applying movement concepts and principles helps students increase their comfort, confidence, competence, and proficiency with movement, thereby increasing their rates of overall physical activity and improving their health." (p. 23)

Previous research supports the effectiveness of self-monitoring achievement beliefs (goal setting & self-evaluation) and its positive correlation to learning and achievement. (Schunk & Zimmerman, 1994; 2008; Zimmerman, 2000; Zimmerman & Kitsantas, 1996). Goals and motivation are two primary factors included in effective self-regulation (Bandura, 1986, Kanfer & Kanfer, 1991; Zimmerman, 2000). This direct link between fundamental movement skills and self-efficacy is a key aspect to keeping students participating in Physical Education. It is hoped that when students participate in setting a learning goal based on a physical skill and subsequently evaluating themselves on that goal, self-efficacy in fundamental movement skills will also increase. Receiving regular feedback from their teachers is an important part of this process. Therefore, in order for the FPE Tool to be valuable to students, it must give them the opportunity to set their own goals (goal setting), be a part of the development of the learning goals (motivation,) and engage in some self-monitoring (self-evaluation).

Zimmerman shares that self-regulation is a three-phase cyclical pattern involving forethought, performance and self-reflection (1998). The forethought phase precedes

actual performance and refers to processes that involve goal setting. The performance (volitional) control phase involves processes that occur during learning and action. During the self-reflection phase, which occurs after performance, people respond to their efforts.

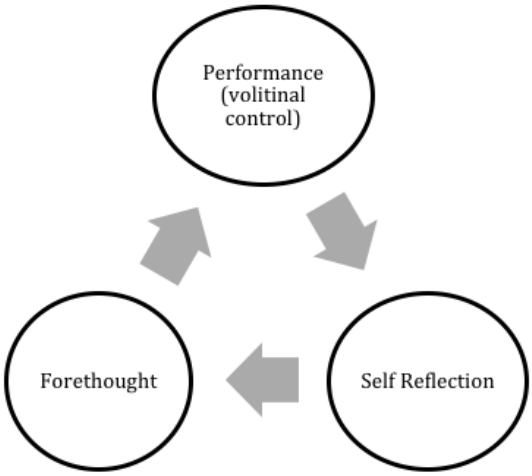

Fig. 1: **Self-regulation cycle phases**. Source: From "Developing Self-Fulfilling Cycles of Academic Regulation: An Analysis of Exemplary Instructional Models," by B. J. Zimmerman, 1998, in D. H. Schunk and B. J. Zimmerman, (Eds.). Self-Regulated Learning: From Teaching to Self Reflective Practice (p. 3). New York: Guilford Press.

This model supports the development of the FPE tool. Using the tool, students engage in ***forethought*** when they establish and write down the learning goal for the class at hand. They move through ***performance*** during the actual class itself and the ***self-reflection*** phase is engaged when students assess themselves based on their active participation levels, safety considerations and the learning goal previously established. This also parallels work done by Winne and Perry (2000) in which they recognize the loop created by the self-reflection requiring the participant to further adjust subsequent goals creating new opportunities for forethought, thereby continuing the cyclical nature of the self-regulation phases.

Of primary interest to this research is a study conducted by Kolovelonis et al., (2012). They investigated the ability to improve junior grade students' dribbling abilities by using the 4-step model Schunk and Zimmerman (1997) adopted from the social cognitive theory, in which they propose that students improve basic physical competencies when provided with regular feedback. (Schunk & Zimmerman, 1997; Zimmerman, 2000). Researchers assigned 100 students (40 boys and 60 girls) to four experimental and one control group. Each experimental group received different types of feedback and goal setting directives. Three of the four groups improved their dribbling skills from pre- to post-test. No improvement was noted for the control group of students who received no feedback and did not participate in goal setting activities. Students who received social feedback, observed repeated demonstrations, set process or performance goals and self-recorded their performance, observed improvements in their skill level. These results support the effectiveness of the social cognitive model of self-regulated learning, demonstrating that this model can be used as an instructional approach for teaching sport skills in Physical Education (Kolovelonis et al., 2012) and serves as a primary influence in the development of the FPE tool herein. Zimmerman & Kitsantas (1996) found similar results when evaluating dart throwing among high school female students.

The purpose of this research was to evaluate the FPE tool and its impact on student self-efficacy. Additionally, both teachers and students examined the value of formal formative and summative feedback as well as the possible significance of goal setting and self-regulation in the discipline of Physical Education.

Research Questions

This study examines five research questions.

1. Is the FPE tool an effective tool for teachers to use to formalize feedback for students?
2. Does the FPE tool assist teachers in developing personalized comments to use for reporting purposes?
3. Does providing formalized feedback in Physical Education affect students' self-efficacy or attitudes towards the discipline?
4. Does goal setting by students influence their self-efficacy in the junior grades in Physical Education?
5. Do students' attitudes change towards Physical Education as a result of using the FPE tool in the junior grades?

Method

Participants

When defining the sample in this study, both the students and teachers must be considered. The student population comes from a Catholic Elementary School in an urban setting that ranges from Junior Kindergarten to Grade 8 (n = 340). This school exists in a suburban middle class city of approximately 250 000 people. Three junior level classes (Grades 4, 5, & 6) participated in the study [n = 24 (Gr 4); n = 20 (Gr. 5); n = 24 Gr. 6)].

Three teachers participated in the study. Two of the teachers have post secondary education in Physical Education (15 and 13 years of teaching experience) and the third teacher took a Kinesiology class in high school but has no further formal training specific

to Physical Education (5 years of teaching experience) outside of their general teaching qualifications. An initial interview was conducted with teachers to gather information related to their teaching experience, attitudes, and knowledge related to Physical Education as well as their assessment practices and self-regulation approaches. Brief profiles were constructed for each of the three participating teachers.

Sampling Procedure

The principal researcher was a staff member of the school where the research took place. The principal of the school was asked if the research could take place in the school and written consent was obtained (See Appendix C). The three junior teachers were approached by the researcher and asked to be a part of the study. This group of teachers was asked to be a part of the study as there was a mix of experience in background experience and teaching Physical Education. One teacher has no formal training in the discipline and little personal history. A second teacher has an undergraduate degree in Physical Education and a third teacher has a post graduate Master's degree in Physical Education. Each taught their own Physical Education classes and all were a part of the same school therefore lending itself to a more consistent student population from which the study was conducted. All three teachers agreed orally and subsequently in writing by completing the written consent form (See Appendix D).

Materials and Procedure

Prior to the teacher interviews being conducted, the researcher met with each of the three classes individually without the teacher present in the room. Students were invited orally to take part in the research (See Appendix E). Information letters and

consent forms were sent home with students in each of the participating teacher's classrooms. Written consent from parents/guardians was obtained (See Appendix F).

Once written parental consent was obtained, the researcher requested verbal consent from each class again (See Appendix G), before distributing the written surveys [Student Physical Education Survey (SPES) (See Appendix H); Self-Efficacy for Outcomes in Physical Education (SOPE) (See Appendix I)] and instructed students that if there were any questions they did not want to answer, they did not have to. Students completed both surveys prior to the intervention as well as post-intervention. The first survey, "Student Physical Education Survey" was a 2-page survey (See Appendix H). It consisted of 7 Likert-type questions designed to elicit information about the students' attitudes towards Physical Education ("How much do you enjoy Physical Education?") as well as how important it was to get a good grade in Physical Education ("How important is it for you to get a good grade in Physical Education"). These questions were followed up with question directed at students' self-perceptions of their physical fitness ("How physically fit are you?"); their skill levels ("How good are your skills (throwing, catching, hitting moving objects etc.…) in Phys. Ed?); and, their effort ("How often do you try your very best in Phys. Ed.?"). The final two questions asked participants how often they played outside after school ("How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag, skipping etc.?") and whether or not they participated in organized sport ("Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?") and if so, how often.

The second survey, "Self-Efficacy for Outcomes in Physical Education" (adapted from Urdan & Midgley, 2003) consisted of 6- Likert-type questions (See Appendix I) about the students' self-efficacy level in Physical Education. ("I'm certain I can master the skills taught in school (PE) this year"; "I can do even the most difficult skills in my PE classes if I try"; "If I have enough time, I can do a good job on all of my (PE) work"; "I can do almost al the skills in PE if I don't give up"; "Even if the PE skills are hard, I can learn them"; "I'm certain I can learn how to do even the most difficult PE skills").

The researcher read through each question individually, for both surveys, and students recorded their answers synchronously. The researcher collected the surveys. After students had completed the surveys, pre-intervention interviews were conducted with the participating teachers (See Appendix J). The interviews were recorded and subsequently transcribed. The purpose of the interviews was to elicit information from teachers about their current practices regarding assessment and evaluation in Physical Education specifically focusing on how they communicated about the students' progress as well as what tools teachers used to provide feedback to students and record their own observations. The interview consisted of nine questions. Questions were designed to allow teachers to share any limitations they may have with assessment and evaluation in Physical Education and how their practices were similar to or different from those used in subjects such as mathematics and language. Finally, questions asked teachers about how they may or may not use goal setting and/or self-regulation techniques when teaching Physical Education. Written consent was received prior to the interviews and oral consent was received on tape, on the day of the interview.

The intervention tool (FPE Tool) is designed to increase and formalize communication between students and teachers regarding students' progress in Physical Education. It provides students with an opportunity to assess their participation and safety levels in the gymnasium as well as give students a chance to set goals and comment on their progress after each class. The FPE Tool provides space for teachers to provide written feedback to students about their progress in each of these areas. See Appendix A for a full copy of the FPE tool.

The FPE (Feedback in Physical Education) Tool was created by the researcher, based on the review of the literature examining self-regulated approach to learning and research questions under investigation. The FPE is three pages and consists of three parts. The first part asks students to write down the learning goal prior to the day's Physical Education class (2.1). This engages the forethought phase of Zimmerman's self-regulation model (1998). The second part asks the students, after class (which allows for participation in the performance/volitional phase), to evaluate their active participation and safety levels (1.2) and provides them with an opportunity to supply a comment if they wish. Subsequently students assess themselves on the previously established learning goal (2.1) and again, have the opportunity to supply a comment should they so choose (2.3). These sections allow participants to connect to Zimmerman's self-reflection phase (1998). There is a spot for teachers to provide written formative and summative feedback to students (1.3, 2.4, 2.5, 3.6). Teachers can provide feedback, as necessary. This may involve feedback shared each class or for other students less frequently.

The tool also contains space for teachers and students to co-construct learning goals for active participation, safety in the gym and sport specific movement competencies (1.2, 2.1). Again this speaks to the forethought phase as well. This can all be done prior to the unit of study beginning. Finally, in the third part of the tool there is a rubric for the teacher to complete at the end of the unit that provides students with specific evaluations under each of the four achievement categories as outlined by the Ministry of Education (2010) (3.1). This rubric also provides space for the teacher to use descriptive summative feedback for communication purposes (3.6).

The researcher met collectively with the three teachers who consented to participate in the study. Teachers were trained how to use the FPE Tool in a single 15 minute session. Each section was explained to the teachers and they were given an opportunity to ask any questions they may have. A few clarification questions were identified (e.g., "What do we do if kids are away?" "Students can just indicate an AB in the tracking sheet to note an absence"; "Should we bring these duo tangs to the gym and do them there or should we do this back in class?" "You can do it however you feel it works best for you"). Each teacher was supplied with a black duo tang that contained two copies of the FPE Tool. Teachers were told that if they needed more copies of the tool, to let the researcher know and they would be supplied to them. After the intervention, the researcher met with teachers individually to complete a 10-15 minute interview. Based on the participants' responses, some additional questions were added throughout.

Following the intervention, the same two surveys were re-administered. The first survey, "Student Physical Education Survey – Post Intervention Survey" replicated from

the pre-intervention survey, with an additional five questions. (See Appendix K). The first three additional questions were included to elicit information regarding how the use of the FPE tool may/may not have altered student thinking or perceptions about their experience in Physical Education, particularly with reference to their classes (Did the FPE tool help you at all in classes?); their skill level (Did the FPE tool help you develop better skills in Physical Education classes (e.g., throwing, catching, dribbling, shooting etc.); as well as their attitudes (Did the FPE tool help you with a positive attitude in Phys. Ed. class? Think about your participation levels and your effort.). The final two additional questions asked students to share anecdotal comments, positively or negatively, about their experience with the FPE tool (What were the good things about the FPE tool? What were the not so good things about the FPE tool?)

Following the intervention, interviews were again conducted with the teachers. The interviews took between 9-13 minutes to complete. There were 9 guiding questions with additional questions added in to further probe some of the responses by each teacher. (See Appendix L) The questions were designed to elicit information regarding the use of the FPE tool. (Did the FPE tool assist you in providing feedback to your students in Physical Education classes? Did the new FPE tool assist you in generating a mark for Physical Education? Did the FPE tool assist you in being able to justify the grades you assigned in Physical Education for your report card? (If yes, how so? If not, why not?) The questions also asked teachers to provide information about how the FPE tool may or may not have assisted teachers with goal setting or self-regulation in their classes (Did the FPE tool assist you with goal setting or self-regulation concepts in Physical Education classes? If yes, how so? If not, why not?) Teachers were also asked

to provide their thoughts on what their students' perspectives of using the FPE tool were (From your vantage point, how did your students react to using the FPE tool?) and how to improve the tool itself (Do you have suggestions as to how to make the FPE tool better? What problems did you run into when using the FPE tool?)

Finally, information was sought regarding the teacher's intent to continue using the FPE tool after the study (Will you continue to use the FPE tool after this study? Why or Why not?). A final opportunity for teachers to add any additional information about the FPE tool or assessment and evaluation in Physical Education was also provided. (Is there anything else you would like to add regarding assessment and evaluation in Physical Education or your participation in this study?) These interviews were recorded and later transcribed.

Results

Data were collected through teacher interviews both pre- and post-intervention, as well as student surveys, both pre- and post-intervention. Both qualitative and quantitative analyses were conducted to address the original research questions. Teacher interviews were transcribed and summarized to create a profile of experience, attitudes, and practices for all 3 teachers. Interview answers were analyzed and coded to identify themes. The frequency of each theme was then measured. Using the survey data, descriptive statistics were run to create a picture of student attitudes, skills, self-efficacy, and activity levels. Pearson Correlations established relationships among variables from the student surveys and a series of One-Way ANOVAs were conducted to compare across grade levels. Pre- and post-survey differences were explored using paired sample

t-tests. Student responses to the FPE tool were explored through qualitative analysis of open-ended questions regarding the assessment tool.

Teacher Interviews

Pre-Intervention Interview–Assessment & Evaluation in Physical Education.

Prior to the intervention, teachers were interviewed. Interviews lasted approximately 10-15 minutes and have been transcribed and reviewed to identify common and differing practices and attitudes amongst all three teachers. Interviews were designed to elicit information from teachers regarding their background in Physical Education as well as their current practices with assessment and evaluation in this discipline as well as goal setting and self-regulation concepts. (See Appendix I) From those interviews, the following teacher profiles were created.

The pre-intervention interviews resulted in specific descriptions of each participating teacher and their experiences and attitudes related to both physical education and assessment. The names of all teachers have been changed in order to protect their identity.

Teacher profile: Ms. Sydney. Ms. Sydney completed a General Bachelor of Arts at an accredited Ontario university and has been teaching for 5 years. She took a Kinesiology class in high school and currently teaches her own Physical Education classes to her Grade 4 students. Self-described as "not an awesome Phys. Ed teacher because (she) doesn't have enough background in maybe what needs to be the skills that need to be taught or even how to assess it properly". Ms. Sydney views her lack of Physical Education knowledge and the lack of available tools to be two major road blocks when teaching and assessing Phys. Ed. Ms. Sydney also believes "math and language

take precedence over stuff like that (Phys. Ed.)." She most often uses verbal/oral feedback when communicating with her students about their progress in Physical Education and diverts to report cards when communicating with parents about their child's progress. Ms. Sydney uses goal setting in whole class situations and does not believe she uses any self-regulation concepts in the gym.

Teacher profile: Mrs. Ake. Mrs. Ake has been teaching for 13 years and took an Honours Physical Education Degree from an accredited university in Ontario. She has obtained her Physical Education Specialist Additional Qualifications and currently teaches her own Physical Education classes to Grade 5 students. Mrs. Ake describes Phys. Ed. as her "favourite thing to teach" and feels "very comfortable" teaching as well as assessing and evaluating her students in Physical Education classes. She recognizes differences in the way she evaluates math & language summative pieces with how she evaluates within Physical Education and suggests that time, space, and a lack of understanding on the students' part as some roadblocks interfering with proper assessment and evaluation in Phys Ed. She relies primarily on personal experience and checklists when evaluating her students and communicates with them via small group situations and self-evaluation. When sharing progress with parents, Mrs. Ake uses the report card to facilitate this although does some inquiry when holding meetings at the beginning of the year. She sets class goals orally with her students most days but does use formal goal setting when working through her fitness units. Mrs. Ake considers self-regulation "important", particularly when thinking about safety.

Teacher profile: Mr. Messi. Mr. Messi is a teacher who has been teaching for 15 years and took his Master's in Physical Education from an accredited university in

Poland. He also earned a Master's of Arts Degree from an accredited university in Ontario. He teaches his own Physical Education classes to Grade 6 students. Mr. Messi notes that having "Physical Education staff for the entire school" would help students with "skill development" and believes that without qualified teachers in Physical Education, the fight against obesity is "not going to improve". He suggests that, "if they are trying and participating well and they follow (his) instructions and they participate in warm up activities (and) they (are) trying hard, that is good enough… to… give them a Level 3- if they cannot even do the skill." He recognizes differences in the way he evaluates math & language summative pieces with how he evaluates in Physical Education class as he uses a lot of written feedback in those core subjects, however, in his Phys. Ed. classes it is mainly "observation and variable feedback on the spot", suggesting that it is not as "sophisticated as in other subjects". Mr. Messi identifies a lack of time as the major roadblock preventing assessment in Phys. Ed that mirrors his practice in math and language. His primary method of communicating with his students' parents regarding their development in Physical Education is the report card although he does telephone parents if he finds there is a problem with "coordination or a structural deficiency". Mr. Messi refers to using goal setting and self-regulation in fitness classes.

Evaluation tools. During the interviews, all three teachers indicated that they used checklists and anecdotal notes for as a method of record keeping for reporting purposes in Physical Education. Miss. Sydney shared that rubrics, the curriculum document (Health & Physical Education, 2010) and the OPHEA document also played a role in her evaluation practices. Mrs. Ake also noted that her personal experience was a tool that she currently uses when evaluating students.

Communication tools. All three teachers indicated that they primarily used on the spot oral feedback when communicating with students about their progress in Physical Education. When communicating with parents, teachers relied on the formal report cards that went home with students three times each year. Mr. Messi indicated that if there were "coordination or a structural deficiency", he would communicate his concerns to parents through a phone call. Mrs. Ake shared that at times she may engage some parents in some inquiry about their son/daughter's physical activity level during parent teacher interviews.

Feedback. During pre-intervention interviews, all three teachers indicated a need to create more concrete methods to provide students with formative and summative feedback. Both Mrs. Ake and Mr. Messi felt confident and comfortable with the quality of the oral feedback they provide to their students however, both also suggested that their assessment and evaluation practices in Physical Education differed from their assessment and evaluation practices in Mathematics and Language.

Limitations. Ms. Sydney shared that she does not, "really have any tools… assessment tools" and feels as though she does not, "have enough background… to assess it (Physical Education) properly. She feels as though she is, "kind of left to my own devices on... the assessment front". Mrs. Ake specified that her assessment and evaluation techniques in Physical Education are completely different as it is more based on "teacher impression and interpretation" rather than a, "written performance (that) you can evaluate them (on)." Mr. Messi indicated that there is no, "time to do written feedback in Physical Education when I have to do written feedback in English, Mathematics and other subjects". He feels, as though feedback is "observation" and

"done on the spot". Both Mrs. Ake and Mr. Messi felt as though a lack of time was their major limitation when completing formal assessments and evaluations in Physical Education classes.

Goal-setting. Ms. Sydney reported that she sets goals at the beginning of each new unit she teaches in Physical Education and shares them with her class. At the end of the unit, she "checks in" with her students to see if they have met their goals. If not, Miss. Sydney meets with those students to reassure them that it was okay if they, "didn't do it, you know, sports isn't for everyone". Mrs. Ake indicated that she uses oral goal setting with her students but does not often write the goals down. She does sometimes write goals down particularly in her fitness units as, "it kinds of lends it to it… That one is a little bit easier to have those goals you know learning goals written down." Mr. Messi shared that especially for his fitness classes, he would have students set goals for themselves.

Self-regulation. Ms. Sydney reported that there were no situations in Physical Education where she would use self-regulation concepts. Mrs. Ake noted that knowing how to be safe in the gym and how to participate properly were two areas of focus for her when addressing self-regulation in Physical Education. Mr. Messi suggested that fitness assessment is where he uses self-regulation concepts as they have set goals for themselves and are working towards reaching their goals.

Post-Intervention Interview.

Using the FPE Tool. In the follow up interviews all three teachers indicated that they did not use the FPE tool as intended. Each teacher used the tool twice over the course of 12 weeks. It was the intention that teachers would use them in conjunction

with each and every Physical Education class over the twelve weeks, resulting in having used the tool a total of 24 times. Therefore, data specific to the evaluation of the specific tool was limited.

Evaluating the FPE Tool. Post interviews indicated that although teachers did not use the tool as frequently as intended, each did communicate positive feedback as well as opportunities for improvement when discussing their use of the tool. Miss. Sydney shared that her,

> "… kids were identifying where their areas of strength and areas of weaknesses were of that lesson of the day and it made it a lot easier for me to even pinpoint and give them feedback to them when they could identify it themselves. So then it gave me then an opportunity the next time they went to do the same, similar activity that I could watch for the specific piece that they were working on."

Mrs. Ake suggested that had she used it to its fullest potential, it would have helped her to justify a grade to an inquiring student, parent or administrator if need be. Mr. Messi also agreed with Mrs. Ake's statement however also felt that, "there's not so much interest in Physical Education as it should be so nobody is going to ask about that."

Conversely, finding the time to use the tool appropriately proved to be a roadblock for all three teachers. Teachers found it difficult to set time aside to set and write down a learning goal for the lesson at hand prior to the Physical Education class. The additional time needed for students to assess themselves on the class was also challenging. Mrs. Ake tried to have her students complete their self-evaluations in the gymnasium however, many students would forget pencils or have broken ones which added to the time needed to complete the tasks. She also found it difficult to follow through as her Physical Education class was at the end of the day and she as well as the students felt rushed to complete the of the end of day activities, in addition to completing

the FPE Tool (agendas, packing bags, prayers). Ms. Sydney shared that it was not a part of her regular routine and as such, she often forgot to use the tool.

Marks. All three teachers indicated that, had they used the FPE Tool as intended it would have helped justify a grade to an inquiring student, parent or administrator if needed. Mr. Messi supported this idea, however he also felt that, "there's not so much interest in Physical Education as it should be so nobody is going to ask about that."

Goal-setting. Ms. Sydney identified that the FPE Tool assisted her when setting learning goals for the day in Physical Education and felt that students went into the gym "fully knowing what they were going to do".

Self-regulation. During the post-intervention interview, Mrs. Ake reported that the FPE Tool gave students,

> "a better indication of where they were and how much they were participating. It made them more aware knowing they had to write something when they were done because we would remind them you know that we were going to talk about it and write about it so they kind of had to stop and think."

Teacher's perception of student use. Both Ms. Sydney and Mrs. Ake shared some trepidation on the part of the students when using the FPE Tool. Ms. Sydney indicated that some students balked at the idea of having to write things down in Physical Education. It was her perception some students felt that the gym was a place where they could just go and "have fun" and "play games". As a result, getting her students to write down goals and evaluate themselves was "a bit of a hard sell". Mrs. Ake communicated that she thought her students did not put much effort into it because they were concerned with packing up their belongings and getting ready for the end of the school day.

Suggestions for improvement. Ms. Sydney shared that her class numbered the learning goals rather than rewriting them. Mrs. Ake suggested using a colouring format whereby students could colour something in to evaluate themselves rather than having to write something. Mr. Messi proposed that the formative feedback did not need to be written down. He would rather see a diagnostic tool with written feedback, then provide the oral formative feedback and see the summative feedback in writing.

Intention to continue use of the FPE Tool. All three teachers shared that with minor adjustments they would be interested in using the FPE Tool with their class at the commencement of a new school year.

Additional comments. Mrs. Ake shared that assessment and evaluation in Physical Education is something that definitely needs to be addressed. She felt that with her background that her comfort level was high however, she also felt that those teachers that were not comfortable teaching Physical Education were giving out grades and feedback that did not match her expectations or evaluations. She felt that the FPE Tool could be a good benefit for them. Mr. Messi communicated that people perceive Physical Education as something children do for fun. He believes that if we have more professionally trained Physical Education teachers teaching Physical Education that we would have a better chance of developing life-long active participants in a variety of sports. He is also concerned that students evaluate their fundamental movement skills at a higher level than what they actually are. He feels as though there is a lack of information available to assist teachers and students into knowing what a mature skill level pattern looks like.

Student Surveys

Student Physical Education Survey - Pre-Intervention (March 2013).

Attitudes toward Physical Education.

In general students indicated that they enjoy Physical Education (*M* = 1.93, *SD* = .89), where 1 indicates "It's the best part of school" and 5 indicates "I don't like Phys. Ed ever"). (See Table # 1 for all Means and Standard Deviations). In general, students indicated that it was important for them to get a good grade in Physical Education (*M* = 1.57, *SD* .90) where 1 indicates "Very Important" and 5 indicates "Not Important at All").

Self-Efficacy within Physical Education.

In general, students feel as though they are reasonably fit students (*M* = 2.2, *SD* = .96) where 1 indicates "Very Fit" and 5 indicates "Totally Out of Shape". Overall, students saw their skill level in Physical Education as "pretty good" (*M* = 1.72, *SD* = .86) where 1 indicates "Very Good" And 5 indicates "Not Good At All").

Students, across grades, generally feel as though they try their very best in Phys. Ed. almost always (*M* = 1.57, *SD* = .76) where 1 indicates "Always" and 5 indicates "Never").

Students play outside an average of 2.52 times per week doing activities such as riding bikes, playing tag, skipping (*SD* = 1.13). Fifty-four of the 68 (79%) students surveyed indicated that they played some sort of afterschool sports, such as basketball, golf, soccer, hockey, and dance. Those students, who played after school sports, reported that they did so an average of 3.04 times each week.

ANOVA's were conducted between variables for all questions, on both surveys, and across grades to investigate possible differences in attitudes, effort and/or self-efficacy levels. An ANOVA conducted between grades indicated a significant difference across grades, $F(2,68) = 4.13$, $p = .02$ with regards to students' evaluation of their own skills (throwing, catching, hitting moving objects etc…). A Bonferroni test conducted on the means indicated that there was a significant difference between students' perceived skill in grade 4 ($M = 1.33$, $SD = .57$) and in grade 6 ($M = 1.96$, $SD = .82$). Students in grade 4 saw themselves as more skilled than the students in grade 6. Grade 5 students had a mean score of 1.9 ($SD = .85$) on the skill level item but it was not significantly different than the grade 4 students ($p = .079$).

Student Physical Education Survey - Post-Intervention (June 2013).

Attitudes toward Physical Education

In general students indicated that they still enjoy Physical Education ($M = 2.04$, $SD = .88$), where 1 indicates "It's the best part of school" and 5 indicates, "I don't like Phys. Ed ever"). (See Table # 1 for all Means and Standard Deviations). In general, students indicated that it was still important for them to get a good grade in Physical Education ($M = 1.62$, $SD = .69$) where 1 indicates "Very Important" and 5 indicates "Not Important at All"). However, statistically significant differences were revealed between students in Grades 4 and 5 ($F = 6.038$, $p = .004$). Students in Grade 4 reported it was more important to get a good grade in Physical Education ($M = 1.28$, $SD = .46$), than students in Grade 5 ($M = 1.91$, $SD = .87$).

Self-Efficacy within Physical Education

In general, students feel as though they are still reasonably fit students (M = 2.18, SD = .93) where 1 indicates "Very Fit" and 5 indicates "Totally Out of Shape". Overall, students saw their skill level in Physical Education as "pretty good" (M = 1.81, SD = .79) where 1 indicates "Very Good" and 5 indicates "Not Good At All". Although paired sample t-tests indicate there is a decrease in self-efficacy in Grade 4 students from March to June, [$t(23) = 2.687$, $p = .013$]. Neither Grade 5, [$t(18) = .584$, $p = .567$] nor Grade 6, [$t(20) = -.796$, $p = .435$] students indicated a significant change in self-efficacy. Additionally, the post-intervention results also mirror pre-intervention findings with respect to self-reported skill strength. Even though their self-efficacy dropped, students in Grade 4 (M = 1.44, p = .51) still believe their skill levels to be better than those in Grade 6 (M = 2.09, p = .81).

Finally, students feel as though they try their very best in Physical Education almost always (M = 1.42, SD = 53), where 1 indicates "Always" and 5 indicates "Never"). No significant differences were noted between pre and post-intervention results.

Students play outside an average of 2.01 times per week doing activities such as riding bikes, playing tag, skipping (SD = 1.1), which is fewer times that the pre-intervention results indicate (2.52), however it was not statistically significant. Fifty-four of the 69 (78%; -1%) students surveyed indicated that they played some sort of afterschool sports such as basketball, golf, soccer, hockey, and dance. Those students, who played after school sports, reported that they did so an average of 3.06 (+ .02%) times each week.

All comments collected at the end of the student survey were reviewed and grouped under eleven different themes relating to "the good things about the FPE Tool": (a) effort; (b) organization; (c) attitude; (d) performance; (e) feedback; (f) goal setting; (g) self-evaluation; (h) communication; (i) general help; (j) feedback not related to the question, and (k) couldn't use due to injury/non-participation. There were thirteen themes identified about the "not so good things about the FPE Tool": (a) difficult; (b) didn't help; (c) confusing; (d) performance; (e) feedback; (f) grades; (g) self-evaluation; (h_ forgetting to use; (i) general help question; (j) answer not related to the question; (k) self-efficacy; (l) didn't use the FPE Tool; (m) time. Frequency of themes indicated that some (9/69 = 13%) students found the FPE tool confusing to use. It should be noted that the students only used the tool twice in the course of 12 weeks. Another group indicated that the tool did not help them all that much as they did not use the tool in class very often (12/69 = 17%). Contrary to these observations, other students communicated positive statements about their use of the FPE Tool even with its limited use. Students were able to "keep track of things"; they felt more, "organized"; they found it helpful because they received feedback from their teachers; and it helped them work harder in class (37/69 = 54%).

Self-Efficacy for Outcomes in Physical Education - Pre-Intervention (March 2013).

The scale for this survey ranges from 1, where 1 indicates "Not True At All" and 5, where 5 indicates "Very True". In general students indicated that they were reasonably confident they could master the skills taught in Physical Education (M= 3.83, SD = .88). (See Table # 6 for all Means and Standard Deviations). Students indicated they felt like it

was true that they could do even the most difficult skills in their Physical Education classes if they tried (*M* = 3.69, *SD* = 1.0). They also felt like, it was true that if they had enough time, they could do a good job on all their Physical Education work (*M* = 4.31, *SD* = .89). If they do not give up, students felt as though they could do almost all the skills in their Physical Education class (*M* = 4.33, *SD* = .91). Students believed that if the Physical Education skills were hard, they could learn them (*M* = 4.16, *SD* = 1.09). Students also felt it was reasonably true they could learn how to do even the most difficult PE skills (*M* = 3.53, *SD* = 1.11). A Cronbach's alpha test was conducted to determine that the Self-Efficacy for Outcomes in Physical Education was found to be highly reliable (6 items; **α** = .85).

Self-Efficacy for Outcomes in Physical Education - Post-Intervention (June 2013).

The scale for the post-intervention survey ranges from 1, where 1 indicates, "Not True at All" and 5, where 5 indicates "Very True". In general students indicated that they were reasonably confident they could master the skills taught in Physical Education (*M* = 3.97, *SD* = .75). (See Table # 6 for all Means and Standard Deviations). Students indicated they felt like it was true that they could do even the most difficult skills in their Physical Education classes if they tried (*M* = 3.87, *SD* = 1.0). They also felt like, it was true, if they had enough time, they could do a good job on all their Physical Education work (M = 4.32 (SD = .94). If they do not give up, students felt as though they could do almost all the skills in their Physical Education class (*M* = 4.25, *SD* .94). Students believed that if the Physical Education skills are hard, they could learn them (*M* = 4.28, *SD* = .96). Students also felt it was reasonably true they could learn how to do even the

most difficult PE skills (M = 3.87, SD = 1.12). A Cronbach's Alpha test was conducted to determine that the Self-Efficacy for Outcomes in Physical Education was found to be highly reliable (6 items; **α**= .88).

Correlations.

In an effort to identify the relationship between attitudes towards Physical Education and response to the FPE Tool, a Pearson correlational analysis (1-tailed) was completed (sig. <.05) using a variety of the questions from the two surveys. Results indicated a strong positive relationship between students who thought the FPE Tool would help them in Physical Education and those who thought it was important to get a good grade (R^2 = .67, p = .016). A similar positive relationship was also noted between those believing the Tool to be helpful and those who believed their skills such as throwing, catching, hitting moving objects were good both pre-intervention (R^2 = .31, p = .007), as well as post intervention (R^2 = .21, p = .041). Again, those who found the FPE Tool helpful also felt as though the FPE Tool helped them to develop better skills (R^2 = .51, p = .000), a stronger positive attitude (R^2 = .60, p = .000) and were certain that they could master the skills taught in Phys. Ed (R^2 = -.214, p = .042) that year (See Table 9 for correlations and sig. factors).

Discussion

FPE Tool – Teacher Use

Although the initial research questions in this study were centred on evaluation of the FPE tool, its lack of use by teachers and students resulted in limited data to respond to these questions. However, the teacher interviews, both before and after the intervention

were informative in terms of how teachers approach assessment and evaluation in Physical Education and what suggestions might exist for revision of the tool. Student surveys provided a rich quantitative and qualitative data set to explore student attitudes and perceptions of their self-efficacy in Physical Education and the impact of the tool based on their experience with it.

The FPE Tool was designed for educators with the hopes that it would increase communication between students and teachers in Physical Education. This would then provide students with more concrete feedback in turn, leading to a stronger connection between students and their physical skill development as well as their self-efficacy in this discipline. Even when provided with a tool, teachers still found it difficult to implement on a regular basis.

There was some concern on the part of teachers that the FPE Tool seemed to be a little confusing for the students to use. Teachers mentioned it was difficult to have students complete the Tool after each class as often times, students were rushing out to recess or preparing for home time.

It was anticipated that teachers would use the FPE Tool twice each week over the course of 12 weeks for a total of 24 times. In fact, each of three teachers in the study used the Tool only twice in the 12 weeks. As a result of the disconnect between the intended use of the FPE Tool and it's actual use, the original research questions can only be addressed in part.

FPE Tool – Student Reaction

Students communicated a variety of observations about the FPE Tool when they completed the Student Physical Education Survey, post-intervention. There was a mixed

reaction to the Tool. Some students found it "confusing" yet others found it "organized and easy to use". Others found it made them try harder. Some also found the FPE Tool helped them with their goal setting skills and explained that they liked getting the written feedback from their teachers.

Research Questions

The first research question asked *whether the FPE Tool was an effective tool for teachers to use to formalize feedback for students*. Students indicated in their surveys that when they did receive written feedback from their teachers, it did help them try harder and with goal setting skills. This provides space for continued discussion about the type of feedback students receive in Physical Education classes as well as how often they receive it and what their role is the whole process.

All three teachers in this study (one with little or no background in Physical Education; two with more extensive backgrounds in this discipline) indicated the need for similar assessment and evaluation procedures as used in other core disciplines. However, the same teachers also found it difficult to develop such programming and feedback even when provided with a tool to assist them. Similar to Morgan and Hansen's findings (2011), the teachers in this study communicated that a lack of time due to a crowded curriculum was also a problem for them. A lack of professional development, poor expertise and low levels of teaching confidence were also indicated during interviews, as barriers to teaching in Physical Education.

Physical Education as a discipline is more important than ever, yet it is not treated as such. Our youth are less active and healthy than ever before. Rising statistics in childhood obesity, type II diabetes, exceptional family dynamics and an increase in

screen time via computer games, email and social networking are some factors that support and play a role in this trend. Schools have attempted to take on a larger role in the development of fitness, fundamental movement skills, game play and nutritional education. Through the Ontario Ministry mandate of 20 minutes of Daily Physical Activity (DPA) and the School Food and Beverage Policy implemented in 2011, steps are being taken. While these are positive steps, they do not address the curriculum side of fitness, fundamental movement skills and game play. Based on this study, teachers feel as though they do not have the time and/or expertise to create assessment and evaluation that mirrors the quality experienced in Mathematics and Language instruction.

This study reveals that there is a significant difference in a student's perception of their skill development between Grade's 4 and 6. While students in Grade 4 feel as though their skills such as throwing, catching, striking and kicking are reasonably good, by the time they hit Grade 6, they no longer believe this is true. What is happening in this 2-year span that leads to this? If children are losing faith in their ability to execute fundamental movement skills at such an early age, self-efficacy lowers. If their self-efficacy is low we lose them to physical activity altogether. By the time children hit the age of 11 or 12, they have decided they are not as good at sports anymore. How do we create lifelong physically active people, when by Grade 6 we are already seeing a drop in their self-efficacy in our Physical Education classes in school?

Compounding this finding is the conclusion that Grade 4 students believe it is significantly more important to receive a good grade in Physical Education than it is in Grade 5. Already by Grade 5 students are beginning to discount the value on grades received in Physical Education. Most educators would agree that report card grades are

not the primary factor that should be motivating our youth. Motivation should come from within. It should be internally developed so it may contribute to developing life-long physically active people, which is what we are really interested in doing. However, it would be interesting to study whether or not students held the same opinion regarding grades in Mathematics, Language and Science. If students do not place emphasis on earning good grades in Physical Education, do they also discount the necessity of physical activity in our schools?

The second research question inquired *whether or not the FPE Tool would assist teachers in developing personalized comments to use for reporting purposes*. Again, due to limited use of the tool by the teachers in the study, it is not possible to conclude whether or not this is true. However, all three teachers did indicate during post-intervention interviews that had they been able to use the FPE Tool as intended, they do believe it would have helped them provide their students with specific and personalized comments for reporting purposes. With an increased emphasis on developing report cards that communicate more personal, understandable comments to students and parents, this feature of the FPE Tool becomes important.

The third research question inquired about *whether providing students with formalized feedback in Physical Education affect students' self-efficacy or attitudes.* Students did indicate through their anecdotal comments that when they did receive feedback from their teachers it "encouraged me to do better" and "helped… to know how good I was doing". Metrics do show a difference in students' self-efficacy with respect to fundamental movement skills, specifically from Grade 4 to Grade 6 ($p = .02$; $F = 4.13$). Although this is not a result of the of the FPE, as it was not used, it does provide

significant information for future research into developmental differences in Physical Education instruction and assessment. Why do students in Grade 4 believe their fundamental movement skills such as throwing, catching and striking moving objects are good, yet by the time they are in Grade 6, they no longer believe this?

Previous research suggests that children's competence-related beliefs declines across middle childhood and adolescence in a variety of subject areas (Eccles, Wigfield, et a., 1993; Wigfield et al., 1997). Particularly in the sporting domain, more recent results confirm this finding. From 1989 to 1999, Jacobs, Lanza, Osgood, Eccles and Wigfield studied 761 students' self competence-related beliefs. They were able to show a statistically significant negative correlation between the students' self-reported sports competence and their age (2002). It is possible that the students in this study experienced this phenomenon.

A second explanation provides for interesting thought. During pre-intervention interviews, the Grade 4 teacher reported a lack of knowledge in Physical Education with regards to program development as well as assessment and evaluation methods. Both the Grade 5 and 6 teacher communicated confidence in their teaching methods as well as their assessment and evaluation methods. Mrs. Ake and Mr. Messi, both have undergraduate degrees in Physical Education. Mr. Messi has earned a Master's degree in this discipline as well. Ironically, it is the Grade 4 students who believed their skills in Physical Education were good. Why is it that the teacher with little to no experience and/or confidence when teaching Physical Education has students who think they are great? Why is it that the teachers who have the extensive backgrounds in the discipline have students in their classes who do not think their skills levels are good?

Perhaps students in Grade 4 are not receiving the necessary instruction needed to develop their fundamental movement skills? Is it possible students are being told they are great in Physical Education in Grade 4 and given grades that reflect this attitude? They then move onto Grade 5 and 6 and are provided a more technical focus, with specific corrections and feedback. Maybe the grades are not as high as previously experienced? This change in approach may also account for the statistical differences noted. If students have the opportunity to learn from experts in the field from their first year in school, they may be more accustomed to receiving specific feedback related to the task at hand. They may also develop these fundamental movement skills and strategies earlier on in their development, which may lead to an increase in self-efficacy and in turn, continued effort and commitment towards physical activity.

The fourth research question sought to determine *whether or not student goal setting influenced their self-efficacy in the junior grades in Physical Education*. It was hoped that students who had been struggling with self-efficacy concepts in Physical Education might benefit from the process of setting learning goals for each class. Perhaps the process of having a focused goal would give them something timely and specific to focus on that would help increase their skill level or game play, in turn, increasing their self-efficacy. This could not be measured appropriately due to the infrequent use. The anecdotal comments on the post-intervention teacher survey did not indicate a connection between goal setting and self-efficacy.

On the topic of goal setting, students did mention that the FPE Tool, "help(ed) me keep track of my learning goals"; "show(ed) me the goals to keep in mind"; "helped us keep organized with our learning goals"; "it helps you determine what your weaknesses

(are) and what you should work on for the future"; "this tool helped me keep track of things that I should try to do better at". There is some useful information that can be derived from their comments. Students' seemed to appreciate having a method to organize and track their goals. This suggests that formalized goal setting and a tracking process should be a part of any future amendments to this Tool or any subsequent tools that are developed.

The fifth and final research question attempted to investigate *whether or not attitudes changed towards Physical Education as a result of using the FPE Tool in the junior grades.* The anecdotal comments from those who did use the tool provide some valuable insight. The results of the surveys completed by the students show that no significant changes were observed in any category other than students' perceptions of their own skill levels. Generally speaking, students enjoyed Physical Education classes both before (M = 1.93, SD = .89), and after (M = 2.04, SD = .88) where 1 indicated "It's the best part of school" and 5 indicated, "I don't like Phys. Ed ever").

In the anecdotal notes at the end of the June surveys, students did make some noteworthy observations about their effort levels. One student shared, "it helped me try harder in phis. Ed.". Another indicated that, "it helped me try harder and work harder". Seven percent (5 of 69) of participants made some reference to improved effort levels after having used the FPE Tool. While 7% seems like a small percentage of students that were influenced, this 7% must be considered in context. Even though students only used the Tool twice, a small group of them indicated that it had an impact. It may be that revision of the tool resulting in more regular goal setting and assessment, might result in improve self-efficacy and changes in attitudes. In recognizing that the FPE Tool seemed

to have some reference to improved effort levels, any subsequent Tool development or adjustments to the FPE Tool must keep in mind that goal setting, self-evaluation and the feedback process all play a key role in elementary junior level Physical Education classes.

Is it reasonable to think that with improved effort levels, even more students may like Physical Education classes? While most seem to like classes between Grades 4 and 6, a quick examination of the number of students taking optional high school classes in Physical Education may suggest that enthusiasm decreases over time. The results from the post intervention survey show that those students who enjoy Physical Education consistently try their best, are also certain that they can master the skills taught in class, believe themselves to be physically fit, play outside more often and are more likely to participate in after school sports. While these discoveries seem logical and not necessarily shocking, they do underscore the need to provide younger students with Physical Education classes that are engaging, make them feel as though they are competent, and scaffold their effort levels such that improvements are made and noticed.

Limitations

Although the results of the study inform the researcher's concern related to assessment and evaluation in Physical Education, the study also has some limitations. The researcher was a member of the staff at the school in which the research was conducted. This may have affected teachers' willingness to volunteer to participate in the study. More than one teacher commented that they felt bad that they did not use the FPE Tool as intended. The researcher reassured the teacher participants that the lack of using

the FPE Tool would not affect the research outcomes as not using the Tool was also providing important information.

The researcher did not teach any of the students at the time of participating in the study, however, did teach some of the students in past years. This may have lead to some students wanting to answer questions favourably or unfavourably based on their personal opinions of the teacher. The researcher instructed the students to answer the questions as honestly as possible and said they could skip any questions that they did not want to answer or made them feel uncomfortable.

The FPE Tool was not field-tested prior to use in the study. Future research involving teachers using a new assessment and evaluation tool should be initially field-tested and as such, is a limitation in this study.

Implications & Future Research

Key findings derived from this study, stem from the interviews completed with the three participating teachers as well as the surveys completed by students. Anecdotal comments by both teachers and students provide important insights into some of the problems facing Physical Education as a discipline as well as viable avenues of future research. First, students suffer from a decline in self-efficacy in Physical Education between Grades 4 and 6. Second, teachers acknowledge the need to provide assessment and evaluation practices that are similar to those developed in other primary subject areas however the lack of time and expertise to do so are key problems in doing so. Third, students reported they enjoyed receiving formalized feedback about their development in Physical Education despite the FPE Tool being used so sparingly. The fidelity of the intervention was an important aspect of this study and the reasons for the limited use

warrant further discussion. Finally, there is some mention by all participating teachers about the necessity of a Physical Education specialist teaching Physical Education classes in elementary schools.

First, replicating the Student Physical Education Survey on a large scale to affirm decline in self-efficacy in the junior grades in elementary school is necessary. Are we consistently seeing a decrease in student self-efficacy between Grades 4-6 or is this an unusual result? Do results differ in non-urban middle-class communities? Continued research would be prudent. Moreover, if this finding is replicated, identifying variables that might contribute to this loss of confidence in basic physical skill movement at such a young age is paramount. This in turn, will inform practices and programs leading to positive intervention and perhaps an increase in students' self-efficacy in Physical Education leading to more lifelong physically active people.

Second, all three teachers commented that they lacked sufficient time to develop assessment and evaluation tools in Physical Education that were similar to those in other core subject areas. This limitation is common to educators and is noted in a study conducted in Australia by Morgan and Hansen (2011). One hundred eighty-six (186) teachers with varying professional qualifications in Physical Education indicated, through Likert-type surveys, that the crowded curriculum, lack of professional development, lack of funding, inadequate facilities/equipment, class size, poor expertise and low levels of teaching confidence as the major barriers to teaching in Physical Education.

So how do we fix this? The FPE Tool was developed based on a potential solution to assessment in Physical Education that would comparable to that provided in Mathematics and Language. Students would be provided with formalized formative and

summative feedback from their teachers on a regular basis. Students would have an avenue to work through the goal setting process as well as evaluate themselves. While all three teachers in this study agree that these are necessary developments that must be made in elementary Physical Education, even when provided with a tool, found it difficult to find sufficient time to use it as the researcher had intended.

The third conclusion derived throughout the course of this research stems from the fidelity of the intervention itself. It was hoped that the FPE Tool would have been used twice each week. In fact, it was used twice over the entire course of the research. This certainly limits the conclusions that can be drawn from its use, however, some quality information can still be derived from the study as a whole. It was discovered that students' perceptions of their skill levels change between Grades 4 and 6. The results from the study indicate that those students who did find benefit in their two uses of the FPE Tool, also believed it was important to get a good grade in Physical Education, thought their skill levels were good, believed they could master new skills and thought the FPE Tool helped them improve their attitudes in Physical Education classes. These conclusions merit continued discussion.

The composition of the FPE Tool may have played a part in this process. Some did report finding it confusing for students to use and as a result, further study on how to address this piece of feedback is necessary. Co-creating the FPE Tool with the teacher participants and field testing it prior to its use in this Master's thesis may have also lead to an increase in its use. Addressing these problems is important for any future attempts to develop assessment and evaluation tools in Physical Education.

Additionally, future consideration to the influence of alternative theoretical theories may provide new direction for the FPE Tool. Attention should be given to self-determination theory, social comparison theory, as well as intrinsic motivational theories. Each of these theories could be crucial to the unique manner in which students receive immediate product feedback in Physical Education that is not observed in traditional core subjects in a classroom setting.

The final implication of this research builds on reference to the role of the specialist teacher. Further research needs to be conducted on the value of having Physical Education specialist teachers teaching elementary Physical Education classes. Could this have a positive effect on physical skill development and in turn, an increase in self-efficacy, long term physical activity commitment, health and academic improvement? As far back as 1992, the Australian Senate Inquiry into Sport and Sport Education recommended that Physical Education specialists should be teaching all Physical Education classes at all grade levels (SSCERA, 1992). Global compounding evidence would place more credence on having skilled Physical Education teachers teaching the discipline to our youth.

Mr. Messi communicates the need to have specifically trained Physical Education staff in all schools. He believes that, "if (we) are trying to fight obesity and trying to implement more Physical Education classes by D.P.A's (Daily Physical Activity_ and so forth… without qualified teachers, that's not going to improve." In addition, he says that, "a Physical Education teacher has to know what to do… they have to know how to progress in a skills development and without that, you cannot do that. It's easy to throw a ball and say play right, but that's not teaching skills." If we have specifically trained

physical educators, perhaps developing stronger fundamental movement skills from early ages and building upon them will lead to an increase in self-efficacy. If we have an increase in self-efficacy in Physical Education, it stands to reason that students may participate more often and not drop physical activity earlier in life.

Additionally, those who are teaching Physical Education at the elementary level must be provided with professional development opportunities that focus on proper curriculum development as well as valid assessment and evaluation techniques that provide formal feedback to all students in a timely fashion with specific observations. Students need to be able to set goals and, as social cognitive learning theory suggests, observe others completing new skills or attempting new strategies, participate in the activities themselves, and adjust subsequent attempts based on the feedback they receive. These professional development opportunities must be ongoing and should incorporate advancements in technology where appropriate.

Ultimately, having physically active students who engage in a lifetime of physical activity must be the goal of our educational system. Without raising physically literate children, we fail to invest in a part of their futures. Taxing our health care system with adults suffering from preventable diseases due to inactivity is one possible outcome. Ensuring our students have enough self-efficacy in Physical Education through suitable skill development is essential. When students feel capable they will continue to participate. Knowledgeable teachers need to provide feedback to students, which is timely, accurate and developmental. Appropriate assessment and evaluation practices are an important part of this puzzle and as such, demand attention from students, parents practicing teachers, administrators, policy makers, and government officials.

References

Banaz Al-khalidi. (2013). Backgrounder: Obesity trends in Canada. Retrieved from http://umanitoba.ca/outreach/evidencenetwork/archives/13057

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*, 117–148.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Black, P. & William, D. (1998) Assessment and classroom learning, *Assessment in Education*, *5(*1), 7–74.

Bloom, Benjamin S. (1968). *Learning for mastery*. Los Angeles, USA: University of California Press.

Caprara, G. V., Fida, R., Vecchione, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., & Bandura, A. (2008). Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of Educational Psychology, 100*, 515–534.

Desrosiers, P., Godbout, P., & Genet-Volet, Y. (1997). Teachers' assessment practices viewed through the instruments used in physical education classes. *Journal of Teaching in Physical Education. 16*, 211-228.

Eccles, J. S., Wigfield, A., Harold, R., & Blumenfeld, P. (1993). Age and gender differences in children's achievement self-perceptions during the elementary school years. *Child Develeopment, 64*, 830-847.

Feltz, D. L., Landers, D. M., & Raeder, V.(1979). Enhancing self-efficacy in high avoidance motor tasks: A comparison of modeling techniques. *Journal of Sport Psychology, 1*(2), 112-122.

Hay, P. H. & Macdonald, D.,. (2008). (Mis)appropriations of criteria and standards referenced assessment in a performance-based subject. *Assessment in Education: Principles, Policy & Practice, 15*(2), 153-168.

Henninger, M. L., & Carlson, K. B., (2011). Strategies to increase the value of physical Educators in K-12 schools. *Journal of Physical Education, Recreation & Dance. 82*(6), 17-20.

Hom, H. L., Jr., & Murphy, M. D. (1985). Low need achievers' performance: The positive impact of a self-determined goal. *Personality and Social Psychology Bulletin, 11*, 275–285.

Hopper, T., Butler, J., & Storey, B. (2009). *TGfU… Simply good pedagogy: Understanding a complex challenge.* Ottawa, ON: Physical & Health Education Canada.

Jacobs, J. D., Lanza, S., Osgood, D. W., Eccles, J. S., & Wigfield, A. (2002). Changes in Children's self-competence and values: Gender and domain differences across grades one through twelve. *Child Development, 73*, 509-527.

James, A. R., Griffin, L. L., & France, T. (2005). Perceptions of assessment in Elementary physical education: A case study. *Physical Educator 62*(2), 85-95.

Kanfer, R., & Kanfer, F. H. (1991). Goals and self-regulation: Applications of theory to work settings. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 287–326). Greenwich, CT: JAI Press.

Kolovelonis, A; Goudas, M; Hassandra, M & Dermitzaki, I. (2012) Self-regulated learning in physical education: Examining the effects of emulative and self-control practice. *Psychology of Sport and Exercise. 13*(4), 383-389.

Lee, C., (1982). Self-efficacy as a predictor of performance in competitive gymnastics. *Journal of Sport Psychology , 4*(4), 405-409.

Locke, E. A. (1968). Toward a theory of task motivation and incentives. Organizational Behavior & Human Performance, 3, 157-189.

Locke, E. A., & Latham, G. P. (1990). A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice Hall.

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist, 57*,(9), 705–717.

Locke, E. A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. *Journal of Applied Psychology, 69,* 241–251.

Matanin, M., & Tannehill, D. (1994). Assessment and Grading in Physical Education. *Journal of Teaching in Physical Education, 13*, 395-405.

MacPhail, A., & Halbert, J., (2010). "We had to do intelligent thinking during recent PE: Students' and teachers' experiences of assessment for learning in post-primary physical education. *Assessment in Education: Principles, Policy & Practice, 17*(1), 23-39.

Morgan, P. J., & Hansen, V., (2011). Classroom teachers' perceptions of the impact of barriers to teaching physical education on the quality of physical education programs. *Research quarterly for exercise and sport. (79)*4, 506-516.

Morisano, D., Jacob, B., Peterson, J. B., Pihl, R. O & Shore, B. M., (2010). "Setting, Elaborating, and Reflecting on Personal Goals Improves Academic Performance." *Journal of Applied Psychology, 95*(2), 255-264.

National Association for Sport and Physical Education. (1995). *Moving into the future: National standards for physical education.* Boston: Mosby.

Nicol, D & Macfarlane-Dick, D., (2006). Formative assessment and self□regulated learning: a model and seven principles of good feedback practice, *Studies in Higher Education, 31*(2), 199-218.

Ontario Ministry of Education. (2010). *Growing success: Assessment, evaluation & reporting in schools*. Toronto, ON: Queen's Printer for Ontario.

Ontario Ministry of Education. (2010). *The Ontario curriculum: Grades 1-8: Health and Physical Education*. Toronto, ON: Queens' Printer for Ontario.

Pajares, F. (1996). Self-efficacy beliefs in achievement set- tings. *Review of Educational Research, 66*, 543–578.

Pajares, F. (1997). Current directions in self-efficacy research. In M. Maehr & P. R. Pintrich (Eds.), Advances in motivation and achievement (Vol. 10, pp. 1–49). Greenwich, CT: JAI Press.

Pajares, F., & Schunk, D. H. (2001). Self-beliefs and school success: Self-efficacy, self-concept, and school achievement. In R. J. Riding & S. G. Rayner (Eds.), Self-perception (pp. 239–265). Westport, CT: Ablex.

Perry, N. E; Phillips, L. & Hutchinson, L. (2006). Mentoring student teachers to support self-regulated learning. *The Elementary School Journal, 106,*(3), 237-254.

Perry, N. E. & VandeKamp, K. J. O. (2000). Creating classroom contexts that support young children's development of self-regulated learning. *International Journal of Educational Research, 33*, 821-843.

Poag-DuCharme, K. A., & Brawley, L. R. (1993). Self-efficacy theory: Use in the prediction of exercise behavior in the community setting. *Journal of Applied Sport Psychology, 5,* 178–194.

Physical & Health Education Canada. (2009). *Fundamental movement skills: The building blocks for the development of physical literacy. Learning to train stage.* Ottawa, ON.

Rink, J., & Mitchell, M. (2003). State level assessment in physical education: The South Carolina experience. *Journal of Teaching in Physical Education, 22,* 471–472.

Rowlands, A. V., Eston, R. G., & Ingledew, D. K. (1997). Measurement of physical activity with particular reference to the use of heart rate and pedometry. *Sports Medicine, 24*, 258-272.

Senate Standing Committee on Environment, Recreation and the Arts. (1992). *Physical and sport education.* Canberra, Australia: The Parliament of the Commonwealth of Australia.

Schunk, D. H. (1985). Participation in goal setting: Effects on self-efficacy and skills of learning disabled children. *Journal of Special Education, 19*, 307–317.

Schunk, D. H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychologist, 25*, 71–86.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist. 26,* 207-231.

Schunk, D. H. (2012). *Learning theories: An educational perspective (6th Ed.).* Boston: MA: Pearson.

Schunk, D. H., & Hanson, A. R. (1985). Peer models: Influence on children's self-efficacy and achievement. Journal of Educational Psychology, 77, 313–322.

Schunk, D. H., & Rice, J. M. (1987). Enhancing comprehension skill and self-efficacy with strategy value information. *Journal of Reading Behavior, 19*, 285–302.

Schunk, D. H., & Swartz, C. W. (1993a). Goals and progress feedback: Effects on self-efficacy and writing achievement. *Contemporary Educational Psychology, 18*, 337–354.

Schunk, D. H., & Swartz, C. W. (1993b). Writing strategy instruction with gifted students: Effects of goals and feedback on self-efficacy and skills. *Roeper Review, 15*, 225–230.

Schunk, D. H., & Zimmerman, B. J. (Eds.) (1994). *Self-regulation of learning and performance: Issues and educational applications.* Hillsdale, NJ: Erlbaum.

Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist, 32*, 195-208.

Schunk, D. H., & Zimmerman, B. J. (Eds.) (1998). *Self-regulated learning: From teaching to self-reflective practice.* New York: Guilford Press.

Schunk, D. H., & Zimmerman, B. J. (Eds.) (2008). *Motivation and self-regulated learning: Theory, research, and applications.* New York: Taylor & Francis.

Scriven, Michael (1967). "The methodology of evaluation". In Stake, R. E. *Curriculum evaluation*. Chicago: Rand McNally. American Educational Research Association (monograph series on evaluation, no. 1).

Scruggs, P. W., Beveridge, S. K., Eisenmann, P.A., Watson, D.L., Scultz, B. B., & Ransdell, L.B. (2003) Quantifying physical activity via pedometry in elementary physical education. *Medicine and Science in Sports and Exercise, 35*, 1065-1071.

Shephard, R., & Trudeau, F. (2008). Research on the outcomes of elementary school physical education. *The Elementary School Journal. 102*(3), 251-260.

Urdan, T., & Midgley, C. (2003). Changes in the perceived classroom goal structure and Pattern of adaptive learning during early adolescence. *Contemporary Educational Psychology. 28*, 524-551.

Veal, M., L., & Copagnone, N., (1995). How sixth graders perceive effort and skill. *Journal of Teaching in Physical Education, 14,* 431-444.

Veal, M.L., (1988). Pupil Assessment Perceptions and Practices of Secondary Teachers. *Journal of Teaching in Physical Education*. 7, 327-342.

Wiggins, G., & McTighe (2011) *The Understanding by Design Guide to Creating High-Quality Units.* Alexandria, VA: ASCD.

Welk, G. J (2008). The role of physical activity assessments for school-based physical activity promotion. *Measurement in Physical Education and Exercise Science, 12*(3), 184-206.

Welk, G. J., & Wood, K. (2000). Physical activity assessments in physical education. A practical review of instruments and their use in the curriculum. *Journal of Physical Education, Recreation and Dance, 71*(1), 30-40.

Wigfield, A., Eccles, J. S., Yoon, K. S., Harold, R., D., Arbreton, A. J. A., & Blumenfeld, P. C. (1997). Changes in children's competence beliefs and subjective task values across the elementary school years: A three-year study.

Journal of Educational Psychology, 89, 451-469.

Wiggins, G., & McTighe. J., (2011). *The understanding by design guide to creating high-quality units.* Alexandria: VA. Association for Supervision and Curriculum Development (ASCD).

Winne, P.H. & Perry, N. E. (2000). Measuring self-regulated learning. In P. Pintrich, M. Boekaerts & M. Zeidner (Eds.), *Handbook of self-regulation*. Orlando, FL: Academic Press.

Wright, B. J., & O'Halloran, P., (2013) Perceived success, auditory feedback, and mental Imagery: What best predicts improved efficacy and motor performance. *Research Quarterly for Exercise and Sport. 84*(2), 139-146.

Wurtele, S. K. (1986). Self-efficacy and athletic performance: A review. *Journal of Social and Clinical Psychology, 4,* 290–301.

Zimmerman, B. J., (1998). Developing Self-Fulfilling Cycles of Academic Regulation: An Analysis of Exemplary Instructional Models. In D. H. Schunk and B. J. Zimmerman, (Eds.). *Self-Regulated Learning: From Teaching to Self Reflective Practice* (p. 3). New York: Guilford Press.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.). *Handbook of self-regulation* (pp. 13–39). San Diego: Academic Press.

Zimmerman, B. J., & Kitsantas, A. (1996). Self-regulated learning of a motoric skill: The role of goal setting and self-monitoring. *Journal of Applied Sport Psychology, 8,* 60–75.

Table 1
Student Physical Education Survey (Pre & Post Intervention) Grade 4,5,6 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
How much do you enjoy Physical Education?	68	1.93	.89	69	2.04	.88
How important is it to get a good grade in Physical Education?	68	1.57	.90	69	1.62	.69
How physically fit are you?	67	2.16	.96	69	2.18	.93
How good are your skills (thinks like throwing, catching, hitting moving objects etc…) in Phys. Ed?	68	1.72	.86	69	1.81	.79
How often do you try your very best in Phys. Ed.?	68	1.57	.76	69	1.42	.53
How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag. skipping etc…?	67	2.52	1.1	69	2.01	1.1
Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?	68	1.19	.40	69	1.2	.41
If so, how many times each week?	54	3.04	1.8	54	3.06	1.7
Did the new FPE Tool help you at all in Physical Education classes?				67	2.78	.92
Did the new FPE tool help you develop better skills in Physical Education class? (e.g., throwing, catching, dribbling, shooting, etc…)?				67	2.55	.72
Did the new FPE tool help you with a positive attitude in Phys. Ed class? (Think about your participation levels and effort.)				67	2.24	.87

Table 2
Student Physical Education Survey (Pre & Post Intervention) Grade 4 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
How much do you enjoy Physical Education?	24	1.88	.88	25	1.96	.89
How important is it to get a good grade in Physical Education?	24	1.34	.58	25	1.28	.46
How physically fit are you?	24	2.00	.84	25	1.84	.69
How good are your skills (thinks like throwing, catching, hitting moving objects etc…) in Phys. Ed?	24	1.33	.57	25	1.44	.51
How often do you try your very best in Phys. Ed.?	24	1.42	.65	25	1.32	.56
How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag. skipping etc…?	24	2.25	.90	25	1.48	.65
Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?	24	1.13	.34	25	1.12	.33
If so, how many times each week?	20	2.35	1.31	22	2.86	1.52
Did the new FPE Tool help you at all in Physical Education classes?				25	2.56	.82
Did the new FPE tool help you develop better skills in Physical Education class? (e.g., throwing, catching, dribbling, shooting, etc…)?				25	2.28	.79
Did the new FPE tool help you with a positive attitude in Phys. Ed class? (Think about your participation levels and effort.)				25	1.84	.80

Table 3
Student Physical Education Survey (Pre & Post Intervention) Grade 5 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
How much do you enjoy Physical Education?	20	2.00	.92	22	2.23	.92
How important is it to get a good grade in Physical Education?	20	1.60	1.05	22	1.91	.87
How physically fit are you?	20	2.25	1.25	22	2.36	1.00
How good are your skills (thinks like throwing, catching, hitting moving objects etc…) in Phys. Ed?	20	1.9	.85	22	1.95	.90
How often do you try your very best in Phys. Ed.?	20	1.7	.80	22	1.59	.50
How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag. skipping etc…?	20	2.8	1.20	22	2.32	1.32
Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?	20	1.4	.51	22	1.41	.50
If so, how many times each week?	12	3.58	2.11	12	3.58	1.78
Did the new FPE Tool help you at all in Physical Education classes?				20	2.85	.88
Did the new FPE tool help you develop better skills in Physical Education class? (e.g., throwing, catching, dribbling, shooting, etc…)?				20	2.85	.75
Did the new FPE tool help you with a positive attitude in Phys. Ed class? (Think about your participation levels and effort.)				20	2.35	.99

Table 4
Student Physical Education Survey (Pre & Post Intervention) Grade 6 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
How much do you enjoy Physical Education?	24	1.92	.93	22	1.96	.84
How important is it to get a good grade in Physical Education?	24	1.75	1.03	22	1.73	.55
How physically fit are you?	23	2.26	1.00	22	2.4	1.00
How good are your skills (thinks like throwing, catching, hitting moving objects etc…) in Phys. Ed?	24	1.96	.82	22	2.09	.81
How often do you try your very best in Phys. Ed.?	24	1.63	.80	22	1.36	.49
How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag. skipping etc…?	23	2.57	1.27	22	2.32	1.13
Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?	24	1.08	.28	22	1.09	.29
If so, how many times each week?	22	3.36	1.89	20	2.95	1.73
Did the new FPE Tool help you at all in Physical Education classes?				22	2.95	1.05
Did the new FPE tool help you develop better skills in Physical Education class? (e.g., throwing, catching, dribbling, shooting, etc…)?				22	2.59	.50
Did the new FPE tool help you with a positive attitude in Phys. Ed class? (Think about your participation levels and effort.)				22	2.59	.67

Table 5
Self-Efficacy for Outcomes in Physical Education (Pre & Post Intervention) Grade 4,5,6 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
I am certain I can master the skills taught in school (PE) this year.	68	3.82	.88	68	3.97	.75
I can do even the most difficult skills in my (PE) classes if I try.	68	3.69	1.0	68	3.87	1.04
If I have enough time, I can do a good job on all my (PE) work.	68	4.31	.89	68	4.32	.94
I can do almost all the skills in PE if I don't give up.	68	4.34	.91	68	4.25	.94
Even if the PE skills are hard, I can learn them.	68	4.16	1.09	68	4.28	.96
I'm certain I can learn how to do even the most difficult PE skills	68	3.53	1.11	68	3.87	1.17

*Adapted from: Urdan & Midgley (2003) – Six-item Self Efficacy Subscale of the Patterns of Adaptive Learning (PALS) (Cronbach alpha = .84 for grade 7 sample) *Contemporary Educational Psychology*, 28 (2003) 524-551
** Cronbach alpha = .85 for Pre-Intervention Survey
*** Cronbach alpha = .89 for Post-Intervention Survey

Table 6
Self-Efficacy for Outcomes in Physical Education (Pre & Post Intervention) Grade 4 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
I am certain I can master the skills taught in school (PE) this year.	24	3.79	1.02	25	4.2	.65
I can do even the most difficult skills in my (PE) classes if I try.	24	4.08	1.02	25	4.2	.82
If I have enough time, I can do a good job on all my (PE) work.	24	4.21	.88	25	4.32	.85
I can do almost all the skills in PE if I don't give up.	24	4.42	1.1	25	4.36	.64
Even if the PE skills are hard, I can learn them.	24	4.25	1.11	25	4.64	.7
I'm certain I can learn how to do even the most difficult PE skills	24	3.63	1.13	25	4.12	1.01

**Adapted from: Urdan & Midgley (2003) – Six-item Self Efficacy Subscale of the Patterns of Adaptive Learning (PALS) (Cronbach alpha = .84 for grade 7 sample) *Contemporary Educational Psychology*, 28 (2003) 524-551

Table 7
Self-Efficacy for Outcomes in Physical Education (Pre & Post Intervention) Grade 5 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
I am certain I can master the skills taught in school (PE) this year.	20	4.15	.67	21	3.9	.83
I can do even the most difficult skills in my (PE) classes if I try.	20	3.5	.76	21	3.95	.97
If I have enough time, I can do a good job on all my (PE) work.	20	4.6	.68	21	4.19	1.08
I can do almost all the skills in PE if I don't give up.	20	4.6	.6	21	4.29	.96
Even if the PE skills are hard, I can learn them.	20	4.3	.98	21	4.24	.94
I'm certain I can learn how to do even the most difficult PE skills	20	3.8	.95	21	3.9	1.12

**Adapted from: Urdan & Midgley (2003) – Six-item Self Efficacy Subscale of the Patterns of Adaptive Learning (PALS) (Cronbach alpha = .84 for grade 7 sample) *Contemporary Educational Psychology*, 28 (2003) 524-551

Table 8
Self-Efficacy for Outcomes in Physical Education (Pre & Post Intervention) Grade 6 Students
Overall Means & Standard Deviations for Pre & Post Intervention Survey

Survey question	Pre-intervention			Post-intervention		
	n	*M*	*SD*	*n*	*M*	*SD*
I am certain I can master the skills taught in school (PE) this year.	24	3.58	.83	22	3.77	.75
I can do even the most difficult skills in my (PE) classes if I try.	24	3.46	1.06	22	3.41	1.18
If I have enough time, I can do a good job on all my (PE) work.	24	4.17	1.0	22	4.45	.91
I can do almost all the skills in PE if I don't give up.	24	4.04	.86	22	4.09	1.19
Even if the PE skills are hard, I can learn them.	24	4.0	1.16	22	3.91	1.11
I'm certain I can learn how to do even the most difficult PE skills	24	3.21	1.18	22	3.55	1.3

**Adapted from: Urdan & Midgley (2003) – Six-item Self Efficacy Subscale of the Patterns of Adaptive Learning (PALS) (Cronbach alpha = .84 for grade 7 sample) *Contemporary Educational Psychology*, 28 (2003) 524-551

Table 9

Correlations between Student Response to the FPE Tool and Student Perceptions of Their Skills, Attitudes and Effort Levels Regarding Physical Education

	Did the FPE Tool Help You In Phys. Ed?	
	(n)	*Pearson*
How important is it to get a good grade in Phys. Ed?	(64)	.269*
How good are your skills in Phys. Ed? (like throwing, catching, hitting moving objects etc…)?	(64)	.305**
Did the FPE Tool help you develop better skills in Phys. Ed?	(67)	.508***
Did the FPE Tool help you with a positive attitude?	(67)	.598***
How good are your skills in Phys. Ed? (like throwing, catching, hitting moving objects etc…? (June)	(67)	.241*
I'm certain I can master the skills taught in Phys. Ed. (June)	(66)	-.214*

* indicates R^2 <.0005; *** indicates R^2 <.005; ** indicates R^2 <.05*

Appendix A
Feedback in Physical Education Tool (FPE Tool)

Physical Education – Track & Field Unit: **Feedback Physical Education Tool** (FPE)
Learning Goals (1.1):

- **Actively participate (AP)** in class and participate to the best of your ability (A1.1). This includes
  - wearing proper footwear and clothing;
  - trying your best;
  - listening to the feedback you've been given and try to improve;
  - having a positive attitude
- **Be safe in the gym (SG)** at all times by showing that:
  - You listen to directions;
  - You participate in a way that is safe for yourself & everyone around you (B3.1)

May (1.2)	AP	SG	COMMENTS
Tuesday 1st			
Friday 4th			
Tuesday 8th			
Friday 11th			
Tuesday 15th			
Friday 18th			
Tuesday 22nd			
Friday 25th			
Tuesday 29th			

AP & SG boxes ask students to assess active participation (AP) and their safe approaches (SG) in the gym each day. It also provides them a place to comment on these areas where appropriate.

4 – I achieved my best.
3 – I did a good job. I feel like I am improving.
2 – I did okay, but I know I can do better.

1 – I didn't do my best at all today.

AB – I was absent or injured today.
CL – I forgot my clothes today.

4-point scale is defined so consistency is maintained between students. These statements would need to be discussed & understood by all students.

Teacher Feedback (3.1):

_____

_____

_____

_____

Space for teachers to provide descriptive feedback throughout the unit as appropriate, allowing students to know where improvements can be made as well as providing space for positive feedback as well. This is consistent with expectations outlined in the Growing Success document (2010). This can be completed at the end of Physical Education classes in the gym or upon return to the classroom.

Physical Education – Track & Field Unit: **Feedback Physical Education Tool** (FPE)

Learning Goals (2.1):

- Use correct technique when participating in long jump;
- Use correct technique when participating in high jump;
- Use correct technique when participating in shot put;
- Develop sprinting skills;
- Develop long distance running skills

MAY	LEARNING GOAL	STUDENT COMMENTS
Tuesday 1st		
Friday 4th		
Tuesday 8th		
Friday 11th		
Tuesday 15th		
Friday 18th		
Tuesday 22nd		
Friday 25th		
Tuesday 29th		

Students record the Learning Goal prior to heading to Physical Education class and comments on the success and/or difficulties they are encountering with each learning goal. This focuses their attention more specifically in the current class as well as subsequent classes.

Formative Feedback (2.5):

_____

_____

_____

Summative Feedback (2.6):

_____

_____

Formative & Summative Feedback spaces provide teachers with the opportunity to give students specific, timely & written descriptive feedback throughout the unit where appropriate as well as at the end. This becomes useful for creating valid & personal report card comments & grades.

Track & Field Unit (3.1)

	4	3	2	1
Knowledge & Understanding (3.2) Can you show the correct technique for these skills when working through progressions & drills?	- for all skills in all drills	- for most skills in most drills	- for some skills in some drills	- for few skills in few drills
Thinking (3.3) Are you taking the feedback given to you to improve your skills?	- always	- usually	- sometimes	- rarely
Communication (3.4) Do you use the correct terminology for track & field when communicating?	- always	- usually	- sometimes	- rarely
Application (3.5) Did you show teamwork & fair play in this unit? Do you transfer the techniques used in our progressions & drills and put them altogether to form more complex movements?	- always - consistently demonstrates mature movement patterns	- usually - demonstrates mature movement patterns in most skills shown	- sometimes - demonstrates developing movement patterns	- rarely - struggles to demonstrate appropriate movement patterns for this age

Feedback (3.6):

_____

_____

_____

_____

4 Achievement Categories for assessment purposes as outline in the Ontario Health & Physical Education Curriculum document (2010). Includes 4 levels of achievement as well as descriptors for each and a final space for feedback and next steps for students. This becomes a tool for teachers to use when creating summative grades with personalized and specific comments on report cards.

Appendix B

Checklist for OVERARM PASSING

PHE Canada

Names of Students / Components															
Faces sideways to target.															
Opposite food is forward.															
Weight is mainly on the back foot.															
Holds the ball at the chest.															
Focuses on the target point.															
Reports imagining success when asked.															
Holds throwing arm up and sideways in an L-shape.															
The non-throwing arm is up and forward leading.															
Swings arm.															
Keeps eyes focused on the target.															
Steps forward and point the toes to the target.															
Transfers weight forward.															
Rotates the hips and shoulders towards the target.															
The throwing elbow comes through first.															
The shoulders are in line with the target.															
Snaps through and points index finger to the target.															
Follows through so weight is forward And throwing arm down.															
Appears to move confidently and with determination.															
Seems to effectively reflect on prior Trials and constructive feedback to learn and improve.															

PHE Canada. (2009). "Checklist for OVERARM PASSING (Chart)". In PE Canada Physical & Health Education Canada (p. 71), Ottawa: Physical and Health Education Canada.

Appendix C
Principal Consent Form

WILFRID LAURIER UNIVERSITY
INFORMED CONSENT STATEMENT *(Appendix C)*
Assessment and evaluation in physical education: Making it work for teachers and students.
Brigitte Webster, (B.Ed, OCT, M.Ed Candidate)
Julie Mueller, Ph.D. (Assistant Professor, Faculty of Education, WLU)

INFORMED CONSENT STATEMENT [*Principal*]

You and your school are invited to participate in a research study being conducted at Holy Rosary Elementary School. The purpose of this study is to test out a new tool called Feedback in Physical Education (FPE) for teachers and students to use in facilitating the assessment and evaluation process in junior level physical education classes. Brigitte Webster and Dr. Julie Mueller (Assistance Professor, Faculty of Education) will be conducting the research.

INFORMATION

Students and teachers in Grades 4, 5 and 6 at Holy Rosary School are being selected to participate in the initial use of a new assessment and evaluation tool (FPE) for their Physical Education classes. In creating this tool, we are attempting to facilitate further feedback opportunities between teachers and students regarding fundamental skill development, attitudinal factors (effort, participation) as well as goal setting and self-evaluation. Between February and June 2013, students will use this tool twice each week. Each use of the tool should take approximately 2-3 minutes of class time. As part of this process, teachers will be interviewed both at the beginning of the term as well as the end of the term to see if the tool has helped them communicate with your son/daughter regarding their development in physical education classes. Students will participate in a survey at the beginning of February about their experiences with assessment and evaluation in physical education classes. This survey should last approximately 3-5 minutes. They will be surveyed again later in June to find out about their experience with this new tool. This survey will also take approximately 5-7 minutes of their time. All information will, of course, be confidential and only reported anonymously as group data, and for this specific project only.

RISKS

There are no physical, social, or emotional risks associated with participating in the current study. Any quantitative data will be reported in aggregate form with no identifying features. Individual quotations will not include identifying features and require your explicit consent to publish.

BENEFITS

The findings will contribute to developing a larger body of research on developing useful assessment and evaluation tools for students and teachers to use. By so doing, it is our hope that we are contributing to positive experiences in Physical Education classes leading to students setting goals for further achievement in Physical Education with respect to their

fundamental skill development as well as increased participation and effort. The teachers will benefit as this tool will enable them to track student progress on paper throughout the term enabling them to develop more specific and personalized comments to consider when grading and developing report card comments.

CONFIDENTIALITY

Brigitte Webster will audiotape teacher interviews. Dr. Julie Mueller will have access to the raw data (the auditory tapes as well as the transcriptions). Any identifying information will be removed. Children and teachers will be given an ID number (e.g., 2013-1-04) when they are completing the surveys or interviews to make the information they provide anonymous. Informed Consent forms and all data (i.e., questionnaire data, assessment tools with no identifying information) will be stored in Dr. Mueller's lab, which are kept locked at all times. Dr. Mueller will destroy all forms of data seven years after any results are published.

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study, you may contact the researcher, Julie Mueller, at jmueller@wlu.ca and (519) 884-1970 ext. 2115. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-1970, ext. 4994 or rbasso@wlu.ca

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study, every attempt will be made to remove your data from the study, and have it destroyed. You have the right to omit any question(s)/procedure(s) you choose.

FEEDBACK AND PUBLICATION

Feedback will be shared with you and all participants. If you would like to receive a personal copy, please write an email address clearly on this form. Findings from this project may be presented in academic publications and at conferences, however, your child's data will be reported only as a part of a group mean (i.e., your child will not be publicly identified). Quotations may be used from your child's responses; any quotations used will be anonymous and any information that would potentially allow your child to be identified will be removed from the quotation.

CONSENT

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Name: _____

Signature: _____ Date: _____

Choose one:

- **I agree** that quotations may be used in any publication that may arise from this research and that this school will never be identified.
- I do **not** want quotations from this school to be used in any publications.

Appendix D
Teacher Consent Form

WILFRID LAURIER UNIVERSITY
INFORMED CONSENT STATEMENT *(Appendix B)*
Assessment and evaluation in physical education: Making it work for teachers and students.
Brigitte Webster, (B.Ed, OCT, M.Ed Candidate)
Julie Mueller, Ph.D. (Assistant Professor, Faculty of Education, WLU)

INFORMED CONSENT STATEMENT [*Teachers*]

You are invited to participate in a research study being conducted at Holy Rosary Elementary School. The purpose of this study is to test out a new tool called Feedback in Physical Education (FPE) for teachers and students to use in facilitating the assessment and evaluation process in junior level physical education classes. Brigitte Webster and Dr. Julie Mueller (Assistant Professor, Faculty of Education) will be conducting the research.

INFORMATION

Students and teachers in Grades 4, 5 and 6 at Holy Rosary School are being selected to participate in the initial use of a new assessment and evaluation tool (FPE) for their Physical Education classes. In creating this tool, we are attempting to facilitate further feedback opportunities between teachers and students regarding fundamental skill development, attitudinal factors (effort, participation) as well as goal setting and self-evaluation. Between February and June 2013, students will use this tool twice each week as part of their Physical Education classes. Each use of the tool should take approximately 2-3 minutes. As part of the research, teachers will be interviewed both at the beginning of the term as well as the end of the term to see if the tool has helped them communicate with your son/daughter regarding their development in physical education classes. Students will participate in a survey at the beginning of February about their experiences with assessment and evaluation in physical education classes. This survey should last approximately 5 minutes. They will be surveyed again later in June to find out about their experience with this new tool. This survey will also take approximately 5 minutes of their time. All information will, of course, be confidential and only reported anonymously as group data, and for this specific project only.

RISKS

There are no physical or social risks associated with participating in the current study. Teacher participants may regret sharing information and may be uncomfortable being audiotaped during their interviews. Although you may feel reluctant to reveal some information, you can omit questions you do not wish to answer and you can withdraw from the study at any time without penalty or job-related repercussions. Any quantitative data will be reported in aggregate form with no identifying features. Individual quotations will not include identifying features and require your explicit consent to publish.

BENEFITS

The findings will contribute to a small body of research on developing useful assessment and evaluation tools for students and teachers to use. By so doing, it is our hope that we are contributing to positive experiences in Physical Education classes leading to students setting goals for further achievement in Physical Education with respect to their fundamental skill development as well as increased participation and effort. As a teacher, you may benefit, as this tool may enable you to track individual student progress on paper throughout the term. This in turn, may help you to develop more specific and personalized comments to consider when grading and developing report card comments.

CONFIDENTIALITY

Brigitte Webster will audiotape teacher interviews. Dr. Julie Mueller will have access to the raw data (the auditory tapes as well as the transcriptions). Any identifying information will be removed. You will be given an ID number (e.g., 6457) when you are completing the interviews to make the information you provide anonymous. Informed Consent forms and all data will be stored in Dr. Mueller's lab, which is kept locked at all times. Dr. Mueller will destroy all forms of data seven years after any results are published. This consent form provides you with a written assurance that the data collected and your responses through the survey and interviews will only be used for this specific study.

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study, you may contact the researcher, Julie Mueller at jmueller@wlu.ca, and (519) 884-1970 ext. 2115. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-1970 ext. 4994 or rbasso@wlu.ca

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study, every attempt will be made to remove your data from the study, and have it destroyed. You have the right to omit any question(s)/procedure(s) you choose. You will be trained on how to use the tool at a time convenient to you after the initial interview has been completed.

FEEDBACK AND PUBLICATION

Feedback will be given to the Principal to distribute to families in the form of a newsletter upon completion of the project. If you would like to receive a personal copy, please write an email address clearly on this form. Findings from this project may be presented in academic publications and at conferences, however, quantitative data will be reported only

as part of group analyses. Individual quotations may be used but will be anonymous and any information that would potentially allow identification will be removed.

CONSENT

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Your Name: _____ Teaching Assignment: _____

Gender: Male/Female (circle one)
Choose one:

- **I agree** that quotations may be used in any publication that may arise from this research and that I will never be identified.

- I do **not** want quotations to be used in any publications.

Appendix E

Student Oral Invitation to Participate Script

Oral Invitation

"Hi! My name is Mrs. Webster and I am going to school at a university to help me understand more about teaching children. Really the university is a place where we try to learn new things all the time about how students learn and how teachers teach. Your teacher has agreed to use the tool we've created in your Physical Education classes. These letters I am sending home are asking your parents if it is okay for you to participate as well. If you choose to participate, you would fill out some surveys, a couple now and again in June. As well, I am also going to ask that you use the new tool I've created in your Physical Education classes. You don't need to participate in this research, if you would rather not. It is up to you if you fill out the survey or not. If you have any questions, just ask me. If there are any questions on the survey that you don't want to answer you can leave them and go on to other questions. You can stop at any time – this survey has nothing to do with your grades in the class, it is just to help us learn about whether or not this new tool helps you in Phys. Ed. class or not."

Appendix F
Parent Consent Form

WILFRID LAURIER UNIVERSITY
INFORMED CONSENT STATEMENT *(Appendix A)*
Assessment and evaluation in physical education: Making it work for teachers and students.
Brigitte Webster, (B.Ed, OCT, M.Ed Candidate)
Julie Mueller, Ph.D. (Assistant Professor, Faculty of Education, WLU)

INFORMED CONSENT STATEMENT [*Children & Parents***]**

You are invited to participate in a research study being conducted at Holy Rosary Elementary School. The purpose of this study is to evaluate a new tool called Feedback in Physical Education (FPE) for teachers and students to use in facilitating the assessment and evaluation process in junior level physical education classes. Brigitte Webster and Dr. Julie Mueller (Assistant Professor, Faculty of Education) will be conducting the research.

INFORMATION

Students and teachers in Grades 4, 5 and 6 at Holy Rosary School are being selected to participate in the initial use of a new assessment and evaluation tool for their Physical Education classes. In creating this FPE tool, we are attempting to facilitate further feedback opportunities between teachers and students regarding fundamental skill development, attitudinal factors (effort, participation) as well as goal setting and self-evaluation. Between February and June 2013. As part of this process, teachers will be interviewed both at the beginning of the term as well as the end of the term to see if the tool has helped them communicate with your son/daughter regarding their development in physical education classes. Students will participate in a survey at the beginning of February about their experiences with assessment and evaluation in physical education classes. This survey should last approximately 3-5 minutes. They will be surveyed again later in June to find out about their experience with this new tool. This survey will also take approximately 5-7 minutes of their time. All information will, of course, be confidential and only reported anonymously, as group data, and for this specific project only.

RISKS

There are no physical or social risks associated with participating in the current study, beyond the normal risks elementary students take in participating in their regularly scheduled Physical Education classes. Students may feel apprehensive about completing questionnaires with someone who is not their classroom teacher. Parents may be concerned about the release of student self-assessment and/or teacher feedback. Students will be informed that they can omit any questions in the questionnaire at any time. Brigitte Webster will be on hand to provide assistance with completing the questionnaire on both occasions. Again, all information used for data analysis or publication will be referenced in anonymous group format only.

BENEFITS

The findings will contribute to a small body of research on developing useful assessment and evaluation tools for students and teachers to use. By so doing, it is our hope that we are contributing to positive experiences in Physical Education classes leading to students setting goals for further achievement in Physical Education with respect to their fundamental skill development (throwing, catching, striking etc.) as well as increased active participation and effort. It is designed in an effort to facilitate feedback avenues between teachers and students in Physical Education classes.

CONFIDENTIALITY

Brigitte Webster will audiotape teacher interviews. Dr. Julie Mueller will have access to the raw data (the auditory tapes as well as the transcriptions). Any identifying information will be removed. Children will be given an ID number (e.g., 2013-1-04) when they are completing the surveys to ensure anonymity. Informed Consent forms and all data (i.e., questionnaire data, assessment tools with no identifying information) will be stored in Dr. Mueller's lab, which is kept locked at all times. Dr. Mueller will destroy all forms of data seven years after any results are published.

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study, you may contact the researcher, Julie Mueller, at jmueller@wlu.ca and (519) 884-1970 ext. 2115. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-1970 ext. 4994 or rbasso@wlu.ca

PARTICIPATION

Your child's participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study, every attempt will be made to remove your data from the study, and have it destroyed. You have the right to omit any question(s)/procedure(s) you choose. Should you choose for your child to not participate in this study, your son/daughter would participate in their Physical Education classes as a part of their regular routine, however they will not participate in the two surveys. Their teacher may choose to use the FPE tool as a part of their regular and ongoing assessment practices without having the data they collected, be a part of the research study.

FEEDBACK AND PUBLICATION

Feedback will be given to the Principal to distribute to families in the form of a newsletter upon completion of the project. If you would like to receive a digital copy, please write an email address clearly on this form. Findings from this project may be presented in

academic publications and at conferences, however, your child's data will be reported only as a part of a group mean (i.e., your child will not be publicly identified). Quotations may be used from your child's responses; any quotations used will be anonymous and any information that would potentially allow your child to be identified will be removed from the quotation.

CONSENT

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Child's Name: _____

Child's Gender: Male/Female (circle one)

Grade and Home Teacher: _____

Parent/Guardian's signature_____ Date _____

Choose one:

- **I agree** that quotations from my child may be used in any publication that may arise from this research and that my child will never be identified.
- I do **not** want quotations from my child to be used in any publications.

Appendix G

Student Oral Invitation to Complete Surveys Script

Oral Invitation

"Hi! My name is Mrs. Webster and I am going to school at a university to help me understand more about teaching children. Really the university is a place where we try to learn new things all the time about how students learn and how teachers teach. Your teacher has agreed to use the tool we've created in your Physical Education classes. Your parents have said it is okay for you to participate as well. I've come here today to ask you about what you think about how you can work with your teachers to better understand your grades in Physical Education class so I have a survey that I would like you to fill out. I'm going to ask you to complete two surveys, one now and another one in June. It is up to you if you fill out the survey or not. If you have any questions, just ask me. If there are any questions on the survey that you don't want to answer you can leave them and go on to other questions. You can stop at any time – this survey has nothing to do with your grades in the class, it is just to help us learn about whether or not this new tool helps you in Phys. Ed. class or not."

Appendix H
Student Physical Education Survey (SPES) Pre-Intervention

Student Physical Education Survey
(Administration in March 2013)

Circle the number that best fits what you think.

a. How much do you enjoy physical education?

1	2	3	4	5
It's the best part of school!	I like it.	Sometimes I like it, sometimes I don't.	I don't like Phys. Ed. most of the time.	I don't like Phys. Ed. ever!

b. How important is it to get a good grade in physical education?

1	2	3	4	5
Very Important	Somewhat Important	Kind of Important	Not Really Important	Not important at all

c. How physically fit are you?

1	2	3	4	5
Very fit	Fit	Average	Not really fit	Totally out of shape

d. How good are your skills (things like throwing, catching, hitting moving objects etc…) in Phys. Ed?

1	2	3	4	5
Very good	Pretty good	Average	Not really good	Not good at all

e. How often do you try your very best in Phys. Ed?

1	2	3	4	5
Always	Usually	Sometimes	Rarely	Never

f. How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag, skipping etc…?

1	2	3	4	5
Everyday	5 times	3-4 times	1-2 times	Never

g. Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?

YES NO

If so, how many times each week? _____

Appendix I

Self-Efficacy for Outcomes in Physical Education Survey (SEOPES)

Self-Efficacy for Outcomes in Physical Education (Administration in March & June 2013)

Please check the box showing how true you think each statement is:

1. I am certain I can master the skills taught in school (PE) this year.

Not at all true Very true

□ □ □ □ □

2. I can do even the most difficult skills in my (PE) classes if I try.

Not at all true Very true

□ □ □ □ □

3. If I have enough time, I can do a good job on all my (PE) work.

Not at all true Very true

□ □ □ □ □

4. I can do almost all the skills in PE if I don't give up.

Not at all true Very true

□ □ □ □ □

5. Even if the PE skills are hard, I can learn them.

Not at all true Very true

□ □ □ □ □

6. I'm certain I can learn how to do even the most difficult PE skills.

Not at all true Very true

□ □ □ □ □

Adapted from: Urdan & Midgley (2003). Six-item Self Efficacy Subscale of the Patterns of Adaptive Learning Scale (PALS). (Cronbach alpha = .84 for grade 7 sample) Contemporary Educational Psychology, 28, 524–551.

Appendix J

Pre-Intervention Interview Guiding Questions

Teacher Interview Questions

Interview Guide – February 2013

1. Tell me about any of the tools you currently use to evaluate your students in Physical Education.
2. Tell me about how you communicate with your students about their progress in Physical Education classes.
3. Tell me about the type of feedback do you give to your students about their development in Physical Education classes?
    - in class?
    - on paper?
    - on report cards?
4. Tell me about the type of feedback do you give to the parents of your students about their development in Physical Education classes?
5. Tell me about any limitations you may encounter when providing quality assessment and evaluation to your students in Physical Education classes.
6. How does your assessment and evaluation in your Physical Education classes compare to the assessment and evaluation you do in your Mathematics or Language classes?
7. Do you use goal setting in your Physical Education classes with your students? If so, tell me how that works.
8. Do you use any self-regulation concepts in your Physical Education classes with your students? If so, tell me how that works. If not, tell me why this is not a part of your class.
9. Is there anything else you want to tell me about your experiences with assessment and evaluation in Physical Education classes?

Appendix K
Student Physical Education Survey (SPES) Post-Intervention

Student Physical Education Survey
(Administration in March 2013)

Circle the number that best fits what you think.

a. How much do you enjoy physical education?

1	2	3	4	5
It's the best part of school!	I like it.	Sometimes I like it, sometimes I don't.	I don't like Phys. Ed. most of the time.	I don't like Phys. Ed. ever!

b. How important is it to get a good grade in physical education?

1	2	3	4	5
Very Important	Somewhat Important	Kind of Important	Not Really Important	Not important at all

c. How physically fit are you?

1	2	3	4	5
Very fit	Fit	Average	Not really fit	Totally out of shape

d. How good are your skills (things like throwing, catching, hitting moving objects etc…) in Phys. Ed?

1	2	3	4	5
Very good	Pretty good	Average	Not really good	Not good at all

e. How often do you try your very best in Phys. Ed?

1	2	3	4	5
Always	Usually	Sometimes	Rarely	Never

f. How often do you play outside each week when you are not in school doing things such as riding bikes, playing tag, skipping etc…?

1	2	3	4	5
Everyday	5 times	3-4 times	1-2 times	Never

g. Do you participate in after school sports such as basketball, golf, soccer, hockey, dance or anything else?

YES NO

If so, how many times teach week? _____

h. Did the new FPE tool help you at all in Physical Education classes?

1	2	3	4	5
It helped me a lot.	It helped me a little.	It didn't help me.	I found it a little difficult to use.	I found it a lot difficult to use.

i. Did the new FPE tool help you develop better skills in Physical Education class? (e.g., throwing, catching, dribbling, shooting etc…)

1	2	3	4	5
It helped my skills a lot	It helped my skills a little	It didn't help my skills at all	It made my skills get worse a little bit	It made my skills get worse a lot

j. Did the new FPE tool help you with a positive attitude in Phys. Ed. class? (Think about your participation levels and your effort)

1	2	3	4	5
It helped me work & try harder in every class	It helped me work & try harder in some classes	It didn't help me work or try harder	It made me not want to work or try hard sometimes	It made me not want to or try hard a lot of the time

k. What were the good things about the FPE tool?

l. What were the not so good things about the FPE tool?

Appendix L
Pre-Intervention Interview Guiding Questions

Teacher Interview Questions

Interview Guide – June 2013

1. Did the FPE tool assist you in providing feedback to your students throughout the term? If yes, how so? If not, why not?
2. Did the FPE tool assist you in generating a mark for physical education for your students? If yes, how so? If not, why not?
3. Did the FPE tool assist you in being able to justify the grades you assigned in physical education for your report card? If yes, how so? If not, why not?
4. Did the FPE tool assist you with goal setting or self-regulation concepts in Physical Education classes? If yes, how so? If not, why not?
5. From your vantage point how did your students react to using the FPE tool?
6. What problems did you run into when using the FPE tool?
7. Do you have suggestions as to how to make the FPE tool better?
8. Will you continue to use the FPE tool after this study? Why or Why not?
9. Is there anything else you would like to add regarding assessment and evaluation in physical education or your participation in this study?