

Mindful physical education: Factors that facilitate physical educators'  
implementation of Teaching Games for Understanding into their  
teaching practice

by

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## Abstract

In recent years, some academic scholars have advocated for change within Physical Education (P.E.) and promoted an alternative, Teaching Games for Understanding (TGfU), a teaching method grounded in social constructivist theory. Even though TGfU has met with some success, Butler (2005) suggests, it is still a challenge to transition the TGfU methodology into the practical teaching world.

To establish those factors that help the implementation of TGfU into their teaching practices, this researcher interviewed five physical educators enrolled in a Master's TGfU focused cohort, at the University of British Columbia. Following the completion of their Master's summer institute, the participants were interviewed twice, at the beginning of the school year and then five to six weeks later. The participants were also asked to complete three Teaching Perspectives Inventories (TPI), one before and one after the summer institute, and a third one month after the start of the school year. The TPI is used to measure the teaching orientation of educators by organizing answers to teaching belief-specific questions into five teaching perspectives. Understanding that implementation of new initiatives requires support from other stakeholders, the researcher interviewed the participants' primary colleagues and principals.

Four main factors emerged from the research findings: transparent communication between stakeholders, teacher and student motivation, time, and professional development. It has become increasingly clear through the research findings that successful implementation is not simply one individual working alone to implement change but rather a complex network of different interrelating factors and stakeholders.

When implementation of a curriculum innovation such as TGfU, is viewed as an interrelated entity it can be examined through the lens of complexity thinking. The complexity thinking characteristics of self-organization, feedback loops, decentralized control and complex networks, affects the manner in which new initiative are successful. Therefore, for implementation to be successful the type of complex network that is created is paramount. As Davis and Sumara (2008) suggest, a decentralized network – where stakeholders connect (transparency in communication) and collaborate (motivation) where its goal is to become collectively smarter (professional development) – can be seen as the blue print of a knowing and learning system.

## Table of Contents

Abstract.....	ii
Table of Content .....	iii
List of Tables .....	vi
List of Figures .....	vii
Acknowledgements.....	viii
Chapter One: Introduction.....	1
Introduction .....	1
The Context.....	1
The Issue .....	5
The Purpose of the Study.....	7
Study Limitations .....	9
Thesis Overview.....	9
Definitions .....	10
Constructivism .....	10
Behaviorism .....	11
Teacher Beliefs and Knowledge .....	11
TGfU .....	12
Technique Based/Direct Teaching .....	12
Chapter Two: Literature Review.....	13
Introduction .....	13
Theoretical Positions .....	13
Behaviorism .....	14
Constructivism and TGfU.....	15
Teachers and Their Education .....	16
Teacher Beliefs .....	17
Teaching Perspective Inventory.....	18
Pre-service Teacher Education Case Studies .....	19
The Challenges that Face Educators .....	22
Complexity Thinking as an Interpretative Lens.....	25
TGfU in Canada .....	31
Chapter Three: Methodology .....	34
Introduction .....	34
Researcher's Location.....	34
Research Questions.....	35
Research Study Design.....	35
Data Collection .....	36

Teaching Perspective Inventory (TPI) .....	36
Participant Interviews.....	36
Primary Colleague Interviews .....	38
Principal Interviews .....	38
Timeline.....	39
Participants .....	41
Data Analysis .....	42
Processing the Data .....	42
Mapping the Data .....	43
Interpreting the Data .....	43
Presentation of Results .....	43
Ethics .....	44
Participants .....	44
Results .....	44
Reliability .....	44
Generalizability .....	45
Validity .....	45
Triangulation .....	45
Criteria for Evaluation .....	46
Communication of Results .....	46
Chapter 4: Presentation of Research Findings .....	47
Introduction .....	47
Summary of Findings .....	47
Teachers - Teaching Perspective Inventory .....	47
Interviews - Participants.....	48
Interviews - Primary Colleagues .....	49
Interviews - Principals .....	50
Teaching TPI Profiles and Discussion.....	51
William's TPI Results Discussion.....	52
Margaret's TPI Results Discussion .....	54
Noah's TPI Results Discussion.....	56
Amanda's TPI Results Discussion .....	58
Ben's TPI Results Discussion .....	60
Group TPI Results Discussion.....	62
Major Research Findings .....	63
Communication: "and she would have communicated that to me".....	63
Participants .....	64
Primary Colleagues.....	67
Principals.....	70
Professional Development: "it can take all ...sorts of configurations" .....	73
Participants .....	73
Primary Colleagues.....	75
Principals.....	77
Teacher and Student Motivation: "seeing these rewards is motivational" ....	80
Participants .....	81

Primary Colleagues.....	88
Principals.....	90
Time and Planning: “allow it more time and wait for it to work” .....	93
Participants .....	93
Primary Colleagues.....	97
Principals.....	98
Factors Summary .....	111
 Chapter 5: Conclusion .....	 102
Introduction .....	102
Interpretation of Data: The Complexity of The Situation.....	102
Distributed Complex Network .....	104
Centralized Complex Network .....	105
Decentralized Complex Network.....	108
Summary Comment.....	111
Conclusion .....	111
Discussion .....	111
Implications .....	113
Limitations .....	114
Recommendations .....	115
Future Directions .....	115
 References .....	 102
 Appendices .....	 123
Appendix A - Participant Consent form .....	123
Appendix B - Participant Questions - September .....	125
Appendix C - Participant Questions - October.....	126
Appendix D - Primary Colleague Consent Form.....	127
Appendix E - Principal Consent Form .....	129
Appendix F - Primary Colleague Questions/Information Sheet .....	131
Appendix G - Principals Question/Information Sheet .....	132
Appendix H - Participant Request Letter .....	133
Appendix I - Mapping Ideas .....	135
Appendix J - UBC Research Ethics Board Certificate .....	137

## List of Tables

Table 1: Teaching Perspective Inventory .....	37
Table 2: Research Steps .....	39
Table 3: Participant's Background .....	42
Table 4: William's Teaching Perspective Inventory Results .....	52
Table 5: Margaret's Teaching Perspective Inventory Results .....	54
Table 6: Noah's Teaching Perspective Inventory Results .....	56
Table 7: Amanda's Teaching Perspective Inventory Results .....	58
Table 8: Ben's Teaching Perspective Inventory Results .....	60
Table 9: Group Teaching Perspective Inventory Results .....	62
Table 10: Communication Summary .....	72
Table 11: Professional Development Summary .....	80
Table 12: Teacher/Student Motivation Summary .....	92
Table 13: Time Summary .....	100
Table 14: Conclusion Summary .....	114

## List of Figures

Figure 1: Distributed Network.....	30
Figure 2: Centralized Network.....	30
Figure 3: Decentralized Network.....	31
Figure 4: Interrelated Factors.....	103
Figure I-1: Mapping Ideas .....	135
Figure I-2: Mapping Ideas .....	136

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## Chapter One: Introduction

### Personal anecdote

*When looking back on my childhood my favourite times were spent playing games with my siblings on stretches of grass that substituted for the centre court at Wimbledon, or Lord's cricket ground, Twickenham rugby stadium or my favourite Arsenal's grounds at Highbury! It was not just the playing that kept me happy and engaged, it was also the contest of out manoeuvring my opponents to win the point, the game, the match that made me think and that kept me thinking for the next time. This was especially challenging when playing net games with my older siblings. Because of their physical advantage they made me work hard. But not only that they made me think even harder about why, when and where, to play my next shot. The ability to think about what you are doing and why, I believe, is key to being a successful P.E. student. I believe by understanding the why about what you are doing, creates a sense of confidence that pushes you to move beyond you own expectations for yourself.*

### Introduction

Physical education (P.E.) is a crucial and valuable part of the education system, and for many students, one that they look forward to, while for others it is the last place they want to be. For some physical educators this polarization of attitudes is the most challenging part of their teaching, trying to balance between the two factions and at the same time satisfying all their learning needs. This research study will look at one alternative teaching method, Teaching Games for Understanding (TGfU), that this researcher believes will relieve some of the stress placed on both student and teacher, and investigate the factors that help teachers implement it into their teaching practice. This chapter introduces this alternative within the context of the current research literature and presents the challenges it has previously faced. The chapter will also outline the study's methodology and limitations, as well as a brief outline of this thesis.

### The Context

With a growing societal emphasis placed on health and fitness, I believe that physical education can be instrumental in tackling these issues. This can be done in many ways, one of which is by creating physical classes that are enjoyable, thought provoking and confidence building, providing the motivation for students to look beyond their physical classes and to continue lifelong health

and fitness practices into adulthood. The challenge is to find ways that will first engage students and then motivate them to continue being active beyond their school classes. One way to encourage this is to engage students through meaningful games teaching that adapts games play to meet the developmental abilities of the student, through first introducing tactical skills of the game rather than technical skills. This method of teaching, called Teaching Games for Understanding (TGfU) is at the centre of this research study. This study investigates factors that help physical educators implement TGfU into their teaching practice.

Physical education characteristically is taught using a teacher-centred, direct teaching method (Metzler, 2000, Rink, 2002). Direct teaching has some of its roots in the teaching theory of behaviourism. Direct instruction is supported by general principles derived from basic behavioural research (Binder & Watkins, 1990). Behaviourism was in the 20<sup>th</sup> century the most dominant theory of learning. As stated by Davis, Sumara and Luce-Kapler (2008) in their book *Engaging Minds*, “Its orienting assumption was that, to be scientific, researchers and teachers should focus on what is observable and measurable” (p. 92). Teaching in this orientation emphasizes the observation of what someone is doing rather than on what they are thinking (Davis et al., 2008). Rink (2002), suggests that behaviourist teaching is a stimulus-response ideal, where the teacher models the desired behaviour and when the student enacts with the appropriate response he or she is rewarded with positive reinforcement. Further, Rink (2002) states behaviourist teaching breaks down the lesson content into smaller parts, which provides the student the opportunity to manage these parts successfully, while the more challenging content is gradually added. Metzler (2000) suggests that the direct teaching model, “provides the most efficient use of class time and resources in order to promote very high rates of student engagement in practice tasks and skills” (p.162). In games teaching this approach has been expressed as the technical approach.

Behaviourism theory is therefore rooted in a teacher centred approach to teaching, one that uses a direct method, or sometimes referred to in P.E. as

technique based teaching. Although seen to have some lasting and significant principles in learning, as stated by Davis et al. (2008) behaviourism theory as a basis for schooling has shortcomings that need attention. Within P.E. for those students who enjoy and are naturally talented at games, the technical approach has resulted in positive experiences (Butler & McCahan, 2005). Unfortunately, for those students who are not natural athletes, their experiences in games education have resulted in feelings of subjugation and alienation. Butler and McCahan (2005), further suggest that for these students, the technical method leaves little space for creativity or a sense of empowerment. Even though, as Light (2008) implies, constructivism in the last few decades has displaced behaviourism as the theoretical teaching approach in most teacher education programs and scholarly work, behaviourism still has a considerable influence in physical education.

Advances by some academics and practitioners have been made to change the focus of physical education towards a more constructivist theoretical approach to teaching (Light, 2008, Butler, 2006, Oslin & Mitchell, 2006, Azzarito & Ennis, 2003, Kirk, D. & MacDonald, D., 1998, Grehaigne, J., & Godbout, P., 1995, Thorpe, R., Bunker, D., & Almond, L., 1984, Bunker & Thorpe, 1982). Constructivism, is based on a learner centred, holistic approach to teaching, where the body and mind work together to create a meaningful experience. Francis (2009) suggests that this unity of mind and body can be termed the embodied Self. She described it as, "Our mind is our body, our body is our mind, and all our experiences are located in the Self" (p. 43). Unlike behaviourism theory that suggests learning is reduced to simple components, constructivism theory suggests that learning is a complex experience. In constructivist theory, learning and knowledge not only include what is consciously apparent but expands to include what is lived and experienced daily. Therefore learning and knowledge are adapted to include the ever changing world of the student. This leads to the idea that learning occurs from a student's physical, emotional, and cognitively lived experiences (Light, 2008).

There are two main forms of constructivism, psychological constructivism and social constructivism. Psychological constructivism can be defined as, “seeing learning as being a process of the learner constructing unique knowledge through the interaction of his or her previous experiences and knowledge and new experiences” (Light, 2008, p. 24). Within this framework, the socio-cultural context is considered, as well as the activities in which the individual is engaged (Rovegno, 1998). Also believed is, as the individual develops so there are qualitative changes in knowledge (Rovegno, 1998). Social constructivism can be defined as emphasizing the social interaction of the student. That is, students gain knowledge through social interaction in a collective form rather than as an individual (Light, 2008). Rovegno (1998) suggested that learning maybe influenced when students interact with more experienced peers. Within social constructivist theory there is a strong emphasis on group work where the students are given a problem to solve and the teacher facilitates their learning with the use of meaningful questions (Light, 2008).

Within this social constructivist framework there is space to emphasize the principles of democracy (Butler, 2006) and life skills (Sheppard & Mandigo, 2009). If social constructivism advocates that for interaction in a collective form for learning and knowledge to transpire, then at some level, for this to take place a form of democracy is necessary (Butler, 2006). Additionally social constructivism enables both student and teacher to question the current state in which learning and knowledge is presented in the classroom today (Butler, 2006). Life skills are associated with UNICEF Life Skills Based Education and include three main categories, communication and interpersonal skills, decision-making skills and critical thinking skills, and coping and self-management skills. Sheppard and Mandigo (2009) believe that physical education is an ideal environment in which to learn these skills and they believe that a tactical games approach such as Teaching Games for Understanding (TGfU) is one method that will enable this to happen (Sheppard & Mandigo, 2009). Democracy and life skills are defined under the label of citizenship. As Butler (2006) states, “A democratic

citizen has sound character (honesty, integrity, respect and responsibility) and a social conscience (appreciates liberty and justice)” (p.255).

### **The Issue**

In recent years the tactical games approach of TGfU has been advocated by members of the physical education academia as an alternative method of teaching games in physical education, for example: Butler (2005), Kirk and MacDonald (1998), Light (2002), Oslin and Mitchell (2006), Pope (2005), Rovegno (2006). The issue, as documented by a growing number of academics, is that the technical method of teaching games, grounded in behaviourist theory as defined above relies heavily on the students' physical ability and skill to link and comprehend the different conceptual elements of each game. Technical ability over-rides tactical comprehension. In doing so, this method neglects to consider both the physical ability of the students as well as their intellectual understanding of game play. By limiting intellectual understanding, teachers who teach using the technical method miss the potential to engage the majority of their students.

Academic scholars have advocated for change to the teaching and learning that occurs in P.E. and have promoted the theory of social constructivism and especially the tactical games approach to teaching games (Singleton, 2009, Rovegno & Dolly 2006). It will be useful at this point to briefly define the meaning of games in P.E. and TGfU. Games are classified into four categories: target games, for example bowling and curling; striking/fielding games examples of which are baseball or cricket; net/wall games, which encompass the games of badminton and volleyball; and territorial games, which include the games of rugby and football. The categories are distinguished by components such as concepts and skills, player's roles, playing area and offensive and defensive strategies. The level of the games complexity progresses from the most simple, that of target games, to the most complex territorial games (Butler & McCahan, 2005). TGfU is defined as a teaching approach focuses on teaching tactical skills within the context of the game. Therefore, there is an emphasis on tactical game performance first rather than

technical skill performance. Additionally, when the learning situation is appropriate there is emphasis placed on combining the tactical understanding with the skill development within the game, therefore both aspects of game play knowledge are considered, which means neither tactical nor technical are neglected (Hopper, 2002). Games as stated by Metzler (2000) is the largest single content area in P.E., therefore it holds a very important and influential place within the P.E. curriculum.

Even with an emphasis on constructivism, it is still common to find many teachers continuing to teach within the teacher centred behaviourist, direct method (Butler & McCahan, 2005). This suggests that some teachers believe that the direct method is an appropriate way to teach games. While for others it maybe a case of lack of exposure to new ideas and initiatives within the physical education field. The research literature concerning teacher change describes a variety of reasons why teachers make changes within their teaching beliefs. The research literature suggests that factors such as the norms of school culture, the professional culture of teachers, the role of the school principal, the role of professional development, teacher disposition, and the interdependence between beliefs and knowledge all have a strong influence on why and what a teacher beliefs is appropriate to teach (Bechtel & O'Sullivan, 2007). Teachers' beliefs as Tsangaridou (2006) suggests are drawn from their own experiences as students and/or experiences in pre-service education programs. To some extent then it can be said that teachers teach the way they were taught. It is therefore important to recognize that teachers' beliefs play a critical role in the teaching of knowledge content (Tsangaridou, 2006). This has been true of the TGfU model, and as Butler (2005) states, "The merits of TGfU theory, however (merits which seem blindingly obvious to its proponents), have been slow to impress the key players in the arena of physical education—an arena in which the approach is still debated with far more passion than it is practiced" (p. 226).

TGfU is one of several alternative methods of teaching P.E. Other constructivist models have also offered alternatives to the direct method of teaching that is so prevalent in school P.E. classes. These models include the

cooperative learning model that was developed in the 1970s (Metzler, 2000), Sport Education developed by Siedentop in 1994, and Sport of Peace developed in 2000 by Ennis that incorporates many of the strategies of Sport Education (Rovegno, 2006). For P.E. to improve its reputation and provide quality programs, this researcher believes it is necessary to provide an alternative approach to what is currently being offered. Therefore, the question that needs to be asked is; what is the alternative and what does this look like? The answer is to imagine a gymnasium that is full of activity, a variety of games related to common intent, where students are engaged with what they are doing and with their peers, where discussions and ideas are promoted, even essential for the curriculum objectives. To envision a gymnasium where students learn from exploration of ideas and a growing body of knowledge that can be transferred from one activity to another, from one class to another, from one school year to another. Imagine a gymnasium where the democratic process is developed and understood allowing everyone's voice to be heard, a gymnasium where students leave in enthusiastic discussion for what they can accomplish next class. This is the alternative that is possible, the active engagement of students in the learning process rather than the passive reception of information. This research study focuses on the tactical games approach to teaching P.E. This researcher believes that a research project of this nature will reveal valuable information regarding the factors that help P.E. teachers implement the TGfU model into their teaching practice.

### **The Purpose of the Study**

The purpose of this study was to investigate factors that help facilitate the implementation of the teaching method TGfU into the physical educator's games teaching practice. This was accomplished by interviewing five physical educators, all of whom were members of a Master's physical education cohort in the Faculty of Education at the University of British Columbia. They had completed the first two weeks of their Master's program attending the TGfU focused physical education Summer Institute.

The main research question was:

What are the factors that help physical educators implement new initiatives such as TGfU into their teaching practice?

Supplementary questions were:

What are the participants' perceived biggest rewards of using TGfU?

What are the contributing factors that would encourage other teachers to implement TGfU into their teaching practice?

What are the contributing factors that would encourage your physical education department to implement TGfU into their teaching practice?

How did your students react to TGfU?

How did your colleagues react to TGfU?

What is your commitment level to TGfU?

The supplementary questions helped establish how TGfU was received by the physical educators' students, primary colleagues and principal and how their reception of the method affected the physical educator's ability to implement TGfU, and to what extent. To generate answers to the main research question, the participants were initially asked questions that concerned their teaching philosophy, and whether the Master's program influenced their teaching practice. They were also asked about the reaction of their students and their colleagues to their implementation of TGfU. In addition, the participants' primary colleagues and principals were interviewed to identify other supporting factors that helped the teachers implement TGfU into their teaching practice. As Bechtel and O'Sullivan (2007) state, primary colleagues, principals, and students play a supporting role to help facilitate change among physical educators.

The participants completed a series of Teaching Perspective Inventory (TPI) profiles throughout the data collecting section of the study. The TPI is an on-line questionnaire, where the participant's answers from the survey questions are assigned to five different teaching perspectives. Each profile has a dominant and recessive perspective that helps teachers develop their teaching philosophy. The TPI is not used as an analytical tool for this research study but instead to



initiate discussion of how the physical educator's teaching philosophies accommodated the TGfU teaching method.

The data analysis consisted of transcriptions of the interviews, uploaded into the research program NVivo 8, and after many readings and grouping of ideas, the compiling of major themes.

### **Study Limitations**

The researcher, during the participant interviews in particular, found it challenging to keep the teachers focused on the interview questions. Some of the teachers talked in depth about other unrelated teaching issues, which although pertinent to them did not necessarily contribute to the research discussion. For example, some talked of school politics. The researcher as a newer teacher herself and new to research found the interviews a valuable learning experience. To conduct a study of this nature where, the area of inquiry is teacher change and implementation, the amount of time for teachers to implement change in their teaching practice may vary depending on experience level, the type of support and time they have available to them. Therefore, four to five weeks to investigate the success of their implementation is limiting. In addition, the participants taught at different levels, two were elementary and three were secondary, and this led to different areas of concern. For example, the secondary school educators were concerned about the maturity level of their students, and how this affected the students reception to TGfU, while the elementary physical educators, were more concerned with TGfU in its entirety, and reconciling their teaching philosophy with TGfU methodology.

### **Thesis Overview**

The following chapters include a literature review in chapter two. This chapter discusses the differing educational concepts between behaviourism and constructivism. Part of this discussion provides a clear understanding of the difference between the more familiar direct or technique based teaching method and the TGfU method of teaching. The literature review also discusses the notion of teacher beliefs and teacher change, and the affects that has on the ability to

implement new initiatives into their teaching practice. Initiating new ideas involves many interwoven factors; through the critical lens of complexity thinking a case is made that supports the argument that implementing new initiatives is not simply one individual working alone but instead involves many inter-dependant factors that are supported by all stakeholders.

Chapter 3 is devoted to the methodology of the research study. In this chapter, there is justification and discussion of the research methodology used. For example, answers to questions such as how the participants were selected, the time line of the study, what type of recording was used to collect the data, what type of data was collected, how was the data stored, and in what format, as well as the analysis and insights on the limitations of the study. In this chapter, the researcher also states her position and locates herself within the research study.

Chapter 4 presents and discusses the research findings at length, introducing the four main factors that emerged through the research interviews. Chapter 5 discusses the research findings through the lens of complexity thinking. Within this framework, three examples of networks are identified which provides discussion for the possibilities of successful implementing TGfU into a teaching practice. Additionally, Chapter 5 presents the study's conclusion, which focuses on the leading question and the implications of the research findings. Additionally presented in this chapter are recommendations and direction for future study.

## **Definitions**

### **Constructivism**

According to Rovegno and Dolly (2006), the core ideas of constructivism are that:

successful learning results in a deep understanding of a body of knowledge, chunks of information that are well connected and organized around a broad, meaningful, and important concepts and principles within

the domain, and knowledge that can be flexibly and accurately applied and transferred to other contexts (p. 245).

With the key principles being that the student's prior knowledge and experiences are, "culturally based and acquired in social practices within families, social communities and ethnic and religious communities where race, sexuality, gender and class are relevant" (p. 245) and that learning takes place when the student is actively engaged in the construction of knowledge (Rovegno and Dolly, 2006).

### Behaviourism

As noted by Davis et al. (2008), behaviourist educational theory, which is rooted in behaviourist psychology, had the most influence on learning within the 20<sup>th</sup> century education system. Davis et al. (2008) suggests that for learning to be scientific, teachers needed to focus on what is observable and measurable. This meant determining what someone was doing, rather than what they thinking or feeling. Behaviourists acknowledge that mental learning was taking place but unable to be measured, was viewed as subjective and inaccessible for the teacher. For physical educators, this meant physical ability was observable and therefore measurable, and as Davis et al. (2008) note, "If the target behaviour can be isolated and the training regime carefully controlled, the outcomes can be impressive" (p. 94). This indicates one reason why direct teaching has influenced physical education practice for so many years.

### Teacher Beliefs and Knowledge

Tsangaridou (2006) suggests that distinguishing and defining teacher's beliefs has been problematic in academic literature. She uses several definitions to illustrate her point, but concludes her article by using a combination of two definitions, one from Pajares (1992), and one from Calderhead (1996). She first uses Pajares' comparison between belief and knowledge, "Belief is based on evaluation and judgement; Knowledge is based on objective fact" (as cited by Tsangaridou, (2006, p. 487). She then references Calderhead's (1996) definition stating, "although beliefs generally refer to suppositions, commitments, and ideologies, knowledge is taken to refer to factual propositions and the

understandings that inform skilful action (as cited by Tsangaridou, 2006, p. 487). Tsangaridou's defines belief as a constructed meaning that teachers have gained over time based on an ideology garnered from their own personal, social and educational experiences.

#### TGfU

TGfU is a constructivist, student-centred approach to teaching games within the physical education curriculum. As Mitchell and Collier (2009) suggest, the TGfU approach is a:

game-practice-game format, in which the needs of the game drive the skills or movements, which can be practiced within any one lesson. The teacher's role in this is to design an appropriate game or game format, to be a good observer in order to diagnose performance problems, and to effectively guide students to identify these problems and potential solutions. Once solutions are identified the teacher needs to be able to implement appropriate practices that enable players to improve their execution of required skills or movements (p.47).

#### Technique Based/Direct Teaching

The technique-based method teaches the technical skills in isolation of the game. For example, the teaching of how to hold a racket and hit a ball or how to kick a ball is introduced before the tactical skill of understanding why you are doing it. As Rink (2002) states, direct teaching is composed of:

- learning activities sequenced in small, hierarchical chunks
- a task-orientated environment
- the selection of clear instructional goals and materials
- high teacher monitoring of those goals
- structured learning activities
- immediate academic-orientated feedback (p.55).

Direct teaching encourages a teaching environment that is controlled through highly structured instruction that is teacher centred (Byra, 2006).

## Chapter Two: Literature Review

### Personal anecdote

*My experience of P.E. attending school in North Wales was one of not knowing any better. Repetition is a good word to use. Each year we did the same activities; in the autumn and winter even in rain, snow, and freezing temperatures it was field hockey or netball outside, and then inside gymnastics and badminton in the gym, we were fortunate to have a school swimming pool, which brook up the monotony. Come the spring term we were all relieved for a change. In this term there was the opportunity of athletics and two games to play, tennis and rounders, yippee!! Even though as students we did not really know anything different, it did not exactly help those students who found P.E. a challenge in the first place. I was amazed when I started volunteering at a high school in Vancouver, prior to my education degree, that the P.E. students had so many opportunities to experience many different games and variety of activities. The students were able to go sailing one day, go orienteering the next, and use weights the next. It was quite a shock, it made me really reflect on my own P.E. experiences, and I realized what a difference a bit more variety and opportunity could have made in my P.E. classes for me and my peers.*

### Introduction

Within the field of physical education, there are a number of alternatives to the dominant direct teaching or behaviourist teaching model. Not as prominent as direct teaching but providing pedagogical alternatives are cooperative, inclusion, discovery, and sport education teaching. For the purpose of this research question and study, this research literature review will concentrate on a more recent alternative, the tactical games approach of teaching called Teaching Games for Understanding (TGfU). It will also highlight some of the developments, challenges, and benefits academics and teachers have experienced in their quest to implement TGfU as a curriculum model.

### Theoretical Positions

Constructivism has become a significant teaching theory and incorporated into educational policy making in recent years (Richardson & Placier, 2001). Within the subject of P.E. there is a growing world-wide community of academics that promote social constructivism as a theoretical alternative to behaviourist theory for teaching physical education (Singleton (2009), Wright, McNeil & Fry (2009), Gubacs-Collins (2007), Butler (2006), Griffin (2005), Kirk (2005), Pope

(2005), Light (2002), Tinning (1991), as cited by Griffin & Patton (2005) Bunker, Thorpe & Almond in 1989). Initially motivated by the ideas of Bunker, Thorpe and Almond and their development of TGfU more than thirty years ago (Griffin & Patton, 2005), TGfU has seen limited success within the dominant behaviourist method of teaching (2007, Gubacs-Collins). Behaviourism as stated above is a direct method sometimes referred to in physical education as technique based teaching.

### Behaviourism

Pope (2005), an advocate of constructivism, views direct teaching as, “The machine-like, mindless and often tedious drills that have little meaning for the participants or connection for them to the wider game picture” (p.272). As Pope (2005) so clearly states, the question here then is why and how did physical education become so “mindless”? To answer that, we first need to look at how behaviourism differentiated the mind from the body. Behaviourist psychology in the 20<sup>th</sup> century had a huge influence on the learning perspective within the education system (Davis et al., 2008). Behaviourism leaves out of its theoretical framework the notion of introspection and consciousness (Bullock, Stallybrass & Trombley, 1988). Because these mental events cannot be seen, and therefore cannot be measured, they were viewed as, “subjective, idiosyncratic, and inaccessible”, (Davis et al. 2008, p. 92). As Light (2008) points out behaviourism concentrates on the physical behaviours as measurable and therefore influenced by environmental conditions. For teaching, this approach resulted in a feedback and reward system to change and modify behaviour. As mentioned in chapter one, Rink (2002), suggests that direct teaching based on a stimulus-response ideal, is where the teacher models the desired behaviour and when the student responds with the appropriate performance, and is then rewarded with positive reinforcement.

The idea of Cartesian dualism, the separation between the mind and the body, is certainly apparent in education and in physical education in particular. Tinning (1991) quotes Fitzclarence’s notion of dualism as it refers to education,

“we have presented the world of teaching ... as theoretical/practical, process/product, academic/functional, physical/mental, child centre/teacher directed, high status/low status knowledge” (p. 11). The idea of the mind being separate from the body stems from the scientific ideology that has encompassed physical education for decades and has the unchallenged common sense and hierarchy theory of mind and body (Pendergast & Bahr, 2005). As McKay, Gore, and Kirk (1990) argue in their article, *Beyond the Limits of Technocratic Physical Education*, the physical education community emulates empirical-analytical science to gain academic recognition from the education establishment, and at the same time de-emphasize hermeneutic and critical sciences. Collier (2006), in her article, *Models and curricula of physical teacher education*, echoes these thoughts when she states that, “Physical education has consistently taken on a scientific functionalist aim, which promotes physical prowess and competition” (p. 386). McKay et al. (1990) suggest technocratic rationality as being an influencing factor for the scientific functionalism that dominates P.E.

### Constructivism and TGfU

As one alternative to behaviourist theory of teaching physical education, and for the purpose of this literature review it may be useful to highlight some of the developments, challenges and benefits that academics and teachers have experienced in their quest to implement TGfU as a curriculum model.

Griffin and Patton (2005) discuss the original TGfU model, the current developments, and the implications for pedagogical principles. As well, they discuss events that have influenced the development of the model and explore suggested conceptual frameworks. For example, Griffin and colleagues in 1997 developed a simplified three-stage tactical games model that enables teachers to focus on lesson components that modify games to encourage tactical awareness, the use of questioning that develops tactical decision making, and the development of technical skill that helps link the direct or technical method of teaching games with TGfU (Gubacs-Collins, 2007). The technical skills become imbedded in the tactical approach. Even though Pope (2005) severely criticized

the technical method of teaching, a criticism that focused on the way technical skill teaching was delivered and the context surrounding that delivery, there is still a need for the teaching and subsequent potential learning of technical skills. As stated by Mitchell, Oslin and Griffin (2006) skill execution is critical to game performance. They advocate a link between tactical and technical skills suggesting that the introduction of technical skills is more appropriate within the context of the game and after students have familiarized themselves with the tactical aspects of the game (Mitchell et al., 2006). As Mitchell et al. state, "The link between skills and tactics enables students to learn about a game and improve their performance, especially because game tactics provide the opportunity for applying game-related motor skills" (2006, p.8). Therefore, students can rationalize the "why" of what they are being taught first, and relate it to the "how" second.

Butler (2006) explores TGfU from a curriculum value perspective and discusses the differences between direct or technique based method and the tactical approach to teaching games. She explains that teachers who use TGfU have the opportunity to move physical education into the realm of critical thinking, rather than just technical skills, and broaden students' understanding into the area of the affective domain. The idea of students tapping into their affective domain is discussed in the Pope's (2005) article. Pope argues that in physical education, the learning intent should be purposefully developed for emotional benefits, but developing opportunities for this to happen in the movement context had been neglected. He recommends TGfU as an important tool for researching the affective dimensions of learning. Pope (2005) expands further on this idea with taxonomies and models in relation to the affective domain that promotes learning through play and TGfU. The underlining theme of all these articles is the necessity to change the nature of teaching games.

### **Teachers and Their Education**

In today's faculties of education, constructivism has become the dominant teaching theory behind the teaching practice of many, if not all subject areas



(Light, 2008). This is even true of physical education. Even though this research study focuses on qualified teachers, as graduate students, for some this is their first re-entry into academe in more than twenty years. This research study hopes to explore the beliefs that teachers hold regarding different teaching models and theories, therefore it may be useful to explore the increasing number of studies that investigate pre-service teachers' perception of teaching TGfU when implemented into their physical education teacher education (PETE) courses. This part of the literature review will first discuss articles on teacher's beliefs from Tsangaridou (2006), Munby, Russell and Martin (2001), and Collins, Selinger and Pratt (2009). Light (2002), Gubacs-Collins (2007), Butler (2005), Wright, McNeil and Fry (2009) explore the implications beliefs have on pre-service teachers and the possibilities the TGfU model holds in changing the nature of games teaching in physical education. This is followed by a discussion on complexity thinking in relation to learning communities and networks with reference to articles written by Davis and Sumara (2008), Neilsen and Triggs (2007), Hopper (2009), Collins and Clark (2008) and Clarke and Collins (2007). Finally, Singleton (2009), discusses the justification for implementation of TGfU into the Canadian school curriculum.

### Teacher Beliefs

Tsangaridou (2006) suggests that the development of teacher's beliefs is drawn from three categories: their own experience as students, their own life experiences and/or their experience during their pre-service education programs. Students when faced with new and innovative ideas that conflict with their own knowledge base are sometimes resistant to change. This is especially prevalent among pre-service teachers. Studies have shown that pre-service teachers are sometimes conservative in nature (Butler, 2005), accepting ideas and practices that match with their principle beliefs while at the same time rejecting those that do not (Tsangaridou, 2006).

This idea of resistance to change explored in Munby et al. (2001) article, provides a summary of teacher belief literature. Richardson's (1996) discussion

differentiates between attitudes, beliefs, and knowledge. Richardson identifies a teacher who holds beliefs, as someone who accepts their propositions to be true. Richardson also suggests that, “the beliefs of pre-service teachers are so strong that they may be impervious to change within teacher education programs” (Munby et al., 2001, p. 885). Munby et al. also discuss the Block and Hazelip idea that teachers are highly resistant to change once they have established a belief system. Block and Hazelip, as Munby et al. discussed, believe that, “descriptive beliefs, based on personal observation, are central in shaping teacher’s images and are the most difficult to change” (p.885). Knowing that teachers, and especially pre-service teachers, are resistant to changing their beliefs, how do teacher educators provide opportunities that will create a positive environment and encourage teachers to think differently? And, how do teachers, and especially pre-service teachers actually know what they believe?

Collins et al. (2009) suggest that pre-service teachers enter education with preconceived notions about what good teaching is. They also suggest that, similar to Tsangaridou (2006), pre-service teachers use their prior beliefs to filter and reconcile new messages concerning teaching and learning. In addition, they suggest that some pre-service teachers, even regular teachers are unaware of their own teaching philosophy or teaching perspective.

### Teaching Perspective Inventory

Pratt and Collins developed a Teaching Perspective Inventory (TPI) specifically to address the notion of teaching perspectives based on empirical and conceptual research by Pratt in 1992 and 1998. The TPI, as Pratt, Collins and Selinger (2001) suggest, helps teachers construct their teaching philosophies. As stated by Collins et al. (2009), “a perspective on teaching is an inter-related set of beliefs and intentions related to knowledge, learning and the role of the teacher” (p.2). There are five teaching perspectives: Transmission, Apprenticeship, Developmental, Nurturing, and Social Reform. Typically, individuals can access the TPI on line, there are a series of questions and associated scores, results link to each teaching perspective, some perspectives

receive dominant or recessive scores depending on how each multiple choice question is answered. As stated, there is no right or wrong perspective; the TPI results represent different philosophical positions on teaching and learning. In this article Pratt, Collins and Jarvis-Selinger (2001) discuss the research that examines links between teaching perspectives and academic background and gender. In one study, 356 secondary, middle, and elementary pre-service teachers completed the TPI. Physical educators' TPI results indicate that the Nurturing perspective, where self-achievement is dominant, and Transmission perspective, where preparation and mastery of skills are key, was most dominant. Further, it shows that women scored highest on the Nurturing perspective (Collins et al., 2009). The TPI is an important instrument that helps teachers and pre-service teachers explore their own teaching beliefs and philosophies.

#### Pre-service Teacher Education Case Studies

When pre-service teachers enter education faculties, as mentioned above, their beliefs about why, how and what to teach are most probably challenged. Light's (2002) article is ideal to illustrate the impact TGfU can have on students. He conducted a study on generalist elementary pre-service teachers, and looked at the impact TGfU had on their perception, attitudes, and developing teaching beliefs of teaching games. Illustrated in his study is how the teaching method of TGfU positively influenced these students' attitudes and beliefs about teaching games. Light (2002) also discussed the pre-service teachers experiences while in their practicum. He suggests that many had to contend with resistance from their supervising teachers, who felt that TGfU challenged many of the own beliefs about teaching. Like the supervising teacher who resisted the TGfU model, the pre-service teachers themselves prior to the study held strong beliefs regarding physical education that stemmed back to their own experiences in school. It was only after Dr. Light had provided a positive experience using TGfU that the pre-service teachers' beliefs began to change.

Light's (2002) research regarding the attitudes of the pre-service teachers prior to their exposure to the TGfU method is very revealing. Comments highlight the common attitudes among many physical education students, especially the females. One student stated that, "I hated PE at school, I was never any good at sport and I was always last picked for teams and always humiliated by the PE teachers", (Light, 2002, 290). Another student commented, that she was always, "being yelled at and reminded that I was no good at sport. I never knew what was going on and what I was supposed to do?" (p.292). Experiencing TGfU in a practical setting the majority of the students' attitudes had changed to, "I was no longer beaten before the game started" (p. 291). Also, "The little team conferences made your opinion valued, not just the skilful players. It was empowering to be allowed to decide as a team"(p.293). Many of the pre-service teachers found that their engagement levels had increased considerably because the lesson focus had shifted away from technique and concentrated on the development of tactical awareness and decision making through questioning and shared knowledge. This valuable article highlights the successes that are achieved when implementing TGfU into a teacher's physical education practice. And, ultimately changes the nature of physical education from an exclusive one to an empowering one.

The results of Light's (2002) research study are similar to those found by Gubacs-Collins' (2007) action research study. The major purpose of her study was to investigate a class of pre-service teachers, as well as her own perceptions, in regards to the implementation of a tactical approach to teaching a tennis unit. Gubacs-Collins (2007) found that even though the pre-service teachers initially struggled and some resisted the different approach to teaching tennis, the results indicated an increased understanding of the tactical knowledge of tennis, an increase in their interest, motivation, and enjoyment of the game. Gubacs-Collins (2007) when discussing her own beliefs, states, "[the] increased understanding of the approach resulted in a shift in her beliefs about teaching" (p. 106). Even though some students whose ideas of teaching games were entrenched within the technical model and resisted the tactical approach to

teaching tennis, Gubacs-Collins (2007) states that she believed the most important aspect of the TGfU teaching model is that learning takes place within the context of the game, and that it is authentic in nature. This was especially true of the use of questioning, and the pre-service teachers agreed that, “challenging students’ minds would potentially increase their learning and the desire to learn again” (p.117). Gubacs-Collins (2007) reiterates this when she suggests that her students learned more when they were motivated, and their learning experience was more meaningful when it took place within an authentic game context.

One country that has introduced a tactical approach to teaching games within a major syllabus revision is Singapore. In relation to this innovation Wright et al. (2009) has produced a comprehensive study that examined the teaching of games from the theoretical perspective of social constructivism. Wright et al. research involved 49 pre-service teachers, 58 cooperative qualified teachers and 1177 students. Similarly, to Gubacs-Collins (2007), the students in Wright’s et al. study, (2009) reported increased enjoyment and their findings implied they learnt more in an authentic game context. Evidence did indicate that there was a link between the qualified and pre-service teacher’s competence and the quality of perceived learning. However, Wright et al. suggests that teaching for understanding requires complex pedagogical skills that teachers often did not possess. He believed that student teachers’ pedagogical content knowledge was limited due to the complexity and possible inconsistency of scaffolding between multiple faculty members, and suggested it is easier to transmit pedagogical knowledge when the pedagogical team is smaller (Wright et al., 2009). Scaffolding is a key concept in social constructivism, where the teacher provides intellectual space for the students to think and reason about a question or subject area, and act as a partner in this cognitive process. As the student gains the confidence and knowledge necessary to move forward, the teacher will gradually withdraw their support (Wright et al. 2009).

## **The Challenges that Face Educators**

Butler's article (2005) explores how the gap between academic and practitioner, theory and practice can be bridged, and what might facilitate or impede this bridging. To answer this question Butler (2005) looks at the key stakeholders, teachers, administrators, pre-service teachers, researchers and professors and governments, and suggests ways that these different stakeholders hold the ability to impede or facilitate the progression of TGfU in the school system. Butler explores how research paradigms have influenced the development of the PETE programs. She suggests that, there are three research paradigms: behaviourist theory research, socialization theory research, and research based on critical theory (Butler, 2005). She then groups social and critical theory together under the heading of Constructivist TGfU/transaction model against Behaviourist/transmission model and highlights the key differences in a table form focused on ontological differences. Although the table is valuable in its entirety, important for this research study are the comparisons between beliefs system, training, and instruction. Butler (2005) suggests that PETE students can use the table to not only compare the two models but also question where they themselves fit within it, for example by asking a question such as, "Is the role of the teacher to help students acquire knowledge or to help them construct meaning?" (p. 233). This is useful in initially laying the groundwork for their belief systems. Of note and pertaining to this current research study Butler (2005) also discusses the five stages of teaching: Fantasy, Euphoria, Survival, Apprenticeship, and Rediscovery. Within these five stages, Butler explains how teachers develop and grow, and suggests why teachers are impeded or facilitated in their quest to use TGfU in their teaching.

As suggested above, research has shown that teacher change can be challenging. Richardson (1990), like Butler (2005) recognizes that it is not easy to bridge the gap between academic theory and practice. She suggests that teachers are less resistant to change that involves managerial routines or that occur on a temporary basis, rather than change that is complex, conceptual and longitudinal in nature. The idea of change being complex is relevant to this

research study; there are many factors that help create change and assist teachers in their implementation of new ideas.

Previous physical education research literature has suggested that support from other stakeholders such as principals, colleagues, and students is fundamental for the implementation of new initiatives. Faucette and Graham (1986) concluded that the greatest influence for an educator's commitment to new initiatives was a feeling of support from their principals. Bechtel and O'Sullivan (2007) and Cothran (2001) confirmed that support from principals is influential for educators to make and sustain new initiatives into their teaching practice. Bechtel and O'Sullivan (2007) also acknowledged that it was not always necessary for educators to make change. They also highlighted the role of colleagues and students, suggesting that their support was secondary to the principal. Additionally they pointed out that professional development was a fundamental factor for implementation, and connected the principal's participation in such programs as important.

Professional development is an important issue to explore when considering the context for this literature review. Additionally the suggestion of incorporating not just the educators but also other key stakeholders such as their colleagues and principals into that professional development is central to the development of new ideas. Further to this idea, is to consider the nature of this professional development. Unlike the traditional ministry prescribed professional development, Hargreaves (2003) encourages the notion of creating professional learning communities that are based on a new professionalism within the education system. This type of professionalism is composed of many components, and as he suggests it promotes:

deep cognitive learning, learn to teach in ways that were not taught, commit to continuous professional learning, work and learn in collegial teams, develop and draw on collective intelligence, build a capacity for change and risk (2003, p. 15)

Hargreaves draws from socio-cultural approaches, such as the work of Wenger, McDermott, and Williams (2002) and his notion of communities of practice. Communities of practice as Wenger (2002) suggests are, "groups of

people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (para 8). He further suggests that communities of practice are designed and developed by inducing and cultivating participation through negotiation, and that the power of the community lies in their passion, sense of identity and pursuit of an interest and knowledge. As Nielsen and Triggs (2007) suggest the idea of forming a, “professional learning community can offer an opportunity for teachers to engage with each other in meaningful ways to explore and challenge their own practice as well as to develop a collective sense of identity and purpose” (p. 178).

Nielsen and Triggs (2007) warn that as a type of professional development, ‘formal’ learning communities are often organized by the school administrators or school district, and that membership of the group is seen as a requirement of the job. They acknowledge that it does not always follow that space for creative engagement will be created within the group. They argue that the preoccupation with technology-driven educational reforms and the transfer of prescribed knowledge has infiltrated the domain of professional development, and the idea that it is fundamentally about learning has been lost. They instead promote the idea that, “teachers, as learners, need a space to explore conceptions of learning and teaching and learning communities have the potential to offer such a space” (182). Learning they define as, “expanding the space of the possible, for collective and for the individuals within” (p.185). This infers a space that is not hindered by managerial or institutional issues but one where educators have the space to discuss teaching ideas, concepts and learning.

As described above, the factors that support implementation are complex. Davis and Sumara (2008) would suggest that learning communities are complex systems based within the theoretical ideology of complexity thinking.



## **Complexity Thinking as an Interpretative Lens**

Complexity thinking is hard to define in a sentence, and will be discussed in depth, but initially complexity thinking is an analytical theory that explores the similarities of phenomena through a non-linear lens. Davis et al. (2008), use the term synonymously with complexity theory and complexity science. Therefore, this research study will do the same. It is seen as the umbrella that incorporates all coherence theories (Davis et al., 2008). Coherence theories have their roots in constructivism, cultural and critical theories, and ecological theories. As stated by Neilsen and Triggs complexity thinking can be viewed as (2007):

as an umbrella notion applied to learning encourages us to look across a range of coherence theories, including constructivisms, constructionisms, cultural and critical theories and ecological theories...extending the notion of a learning community through a complexivist sensibility will help us to better understand the work of teachers, their own agency in effecting change and the greater possibilities inherent in a community envisioned with such sensibilities (p. 184).

The fundamental principals of coherence theories reject the belief of Cartesian dualism that of the self and the other, individual and collective, and the knower and knowledge (Davis et al., 2008). Davis et al. (2008) noted that complexity thinking addresses all of these theories and their intended individual focuses at the same time. They state that education is, “affected by many overlapping, intertwining, and nested learning systems” (Davis & Sumara, 2008, pp. 110). Therefore, complexity thinking is transdisciplinary, encompassing a wide range of ideas and theories. For this research study the nested layers are the students, teachers, colleagues, principals, and ultimately the expanded school community, school district and province.

For the purpose of this research study, it will be pertinent to discuss complexity thinking and examine certain characteristics that are relevant to the research findings. Complex systems as stated by Davis et al. (2008) are systems that learn. The question asked, is how? Davis et al. (2008) introduce complex systems by comparing it to a complicated system. Complicated theory is mechanical, and used to explain scientific and technical phenomena.

Complicated systems, as explained by Davis et al., (2008) have been historically

used to explain phenomena and can be described as being the sum of all its parts, that, “reduces the phenomena to basic components, root causes, and fundamental laws” (p.76). Complicated systems are seen as displaying a direct cause and effect relationship with the phenomena under investigation, and linear in nature. As Clarke and Collins (2007) explain, this allows “[the] phenomena to be broken down into their constituent parts, analyzed, and then reassembled unproblematically allowing predications to be made about the whole” (p. 161). The use of complicated systems to explain phenomena such as mechanical and technological innovations has as Davis et al. (2008) state, not been helpful in understanding or predicting phenomena that encompass, for example, natural and social states, where the human and natural variables are unpredictable and continually adapting to their environments. As Davis et al. (2008) suggests the analytical attitude encompassed by complicated systems was in the 20<sup>th</sup> century prescribed to learning and focused on the mechanistic delivery of teaching and development of curriculum.

Complexity theory as the umbrella notion for coherence theories has challenged the mechanistic notion of learning (Davis et al., 2008). Complexity theory, as stated by Carroll and Burton (2000), “is a broad theory, it is a related group of concepts and tools that all focus on the effect of interacting parts on a system as a whole” (p. 321). They suggest that when a system is broken down to its simplest parts the meaning of the system is lost. They believe rather that the parts affect the whole system, and that the interactions at the lower levels of the system often dictate the behaviour or pattern of the whole system (Carroll & Burton, 2000). Complex systems, unlike complicated mechanical systems are made up of organic units. Davis et al. (2008) suggests that, “the way a complex (learning) system adapts to a new situation is rooted in its biological-and-experiential structure” (p. 81). As Clarke and Collins (2007) suggest these can for example be, a natural system such as a weather system or a man made system such as a monetary market. As Clarke and Collins (2007) suggest the systems are unpredictable, and always interconnected with other systems, and therefore never reduced to their single parts. Each has to adapt to their ever-changing

environment, which influences the learning that takes place within each system. This means that characteristically complex systems are reliant on other systems to function. As Davis et al. (2007) suggests complex systems by transforming themselves, are adaptable systems.

To help the reader understand the intricacies of complexity thinking which Davis et al. (2007) use interchangeably with complexity theory and complexity science, the following characteristics need discussion: (1) self-organization, (2) internal redundancy and diversity, (3) feedback loops, and (4) complex systems - decentralized, centralized, and distributed. The first characteristic to help frame the research findings is self-organization. A learning system is made up of agents that are themselves complex structures. These structures are adaptable to the environment (Hopper, 2009). When information is sent to or received from a complex structure, it has the ability to change and adapt independently at the local agent level without being authorized at a higher level, suggesting that the system is non-hierarchical in structure. This self-organizing at the local level affects the rest of the system, which suggests that the complex system is interdependent on other agents and constantly in flux (Collins & Clarke, 2008). Therefore, Clarke and Collins (2007) suggests, a complex system can never be, “fully known or controlled” (p.163), it is non-linear extending in all directions (Clarke & Collins, 2007). As Hopper (2009) suggests, as one agent of the learning system adapts and changes this adaption helps the whole system to learn if the agents are inter-connected and committed to the same intent.

This is an important characteristic when considering the agents at play within this research study. Teachers, primary colleagues, principals, and students represent agents, not only at the individual level but also within their stakeholder groups. As stated above, a learning system adapts and changes as information from other agents enters the system and affects the learning of the whole system. For example, there is a group of students, split into two teams playing a modified TGfU game. Within this group, there are several complex systems represented. The individual students who represent local agents, the two individual teams, the whole group playing the game, and then further still the

whole class. As individual students begin to understand the game-play concepts they adapt their game play to meet their growing knowledge and skill, which encourages, especially if agents communicate well, the rest of their team members to adapt their game play to meet the individual's increased learning. For example, using the concept of moving into open space, this creates more opportunity to receive the ball and therefore greater opportunity to be involved in game-play. As the individual student becomes more involved in the game play, so their teammates have to adapt and self organize around their teammates increased learning. The effect of this is not only experienced by his/her team but by the other team that now has to adjust defensively to the student's ability to move into space to receive a pass. Self-organizing has the potential to affect the complex system of the whole class. Students learn to adapt which affects the learning of the other local agents and ultimately the complex learning system of the whole class.

The second characteristic that is pertinent for this research study is internal redundancy and diversity. Internal redundancy within a complex system can be described as similarities that are apparent between the agents. These similarities such as the same language, shared responsibilities, and common expectations allow the agents to work together, it creates common ground in which to communicate and share ideas (Davis et al., 2008). Also, redundancy makes it possible for agents to function even if there is overlapping or differing understanding of ideas or shared responsibility, which Davis et al. (2008) notes makes for a more robust system. The lack of mutual understanding generates the notion of internal diversity, which as suggested by Hopper (2009) is, "critical in a complex system to allow a source of possible responses to emergent circumstances" (p.10).

In relation to teachers in this study, Nielsen and Triggs (2007) explains that even though teachers have a shared understanding of teaching and the education system, they also have different educational and social backgrounds that affect how they approach different ideas and understandings of certain situations. Internal diversity refers to the differing of experiences and

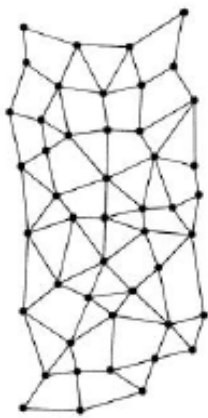
background. For example, the teachers in this research study are all physical education trained teachers, enrolled in a physical education focused Master's program at the same time, and are currently experimenting with TGfU. There is though internal diversity within the group; some teach elementary level while others teach at secondary level, some teach all girls classes while others co-ed classes, some teach at public schools while others at independent schools, and so the diversity continues.

The third characteristic of a complex system that needs discussion in relation to this research study are feedback loops. The non-linear networked structure of the complex system means that information, knowledge, and learning, can be received and distributed at any level within a cyclical path that feeds back to its origin (Clarke & Collins, 2007). Feedback loops, as suggested by Davis et al.(2008), are, “continuous and recursive process that takes part of a system's output and feeds it back as input” (p. 204). Clarke and Collins (2007) further suggest that because complex systems are multi-branched networks, that when combined with the feedback loops, can result in rapid and efficient communication throughout the system. This efficient communication is, I will argue in my thesis, key for the implementation of new ideas such as TGfU. Efficient communication within the complex system suggests that information is received, understood, and consequently learning transpires.

The idea of efficient communication, as an essential element in a complex learning system, is discussed as the fourth characteristic. As Davis et al. (2008) suggest decentralized networks are the blue print for complex learning systems. To find out what they mean by this statement, it will be useful to explore how decentralized control affects a complex system, and how the decentralized networks differ from centralized and distributed networks. Decentralized networks are useful for describing physical systems and allow sense to be made of structural associations. As Nielsen and Triggs (2007) point out, decentralized insinuates that control and responsibility within a complex system is shared among its components, there is no hierarchical control, and as mentioned above, allows for, “fluid and dynamic interaction” (p. 186). Hopper (2009) suggests this

decentralized control allows agents to affect one another's activities. Agents through the communication of information and ideas share and build knowledge producing systems that are self-sufficient from authoritative figures (Hopper, 2009). This idea of shared knowledge can be seen as neighbour interaction, although the word neighbour insinuates a humanistic aspect, it can, as Davis et al. (2008) suggests, refer to a number of other representations such as ideas, images or artifacts. As Nielsen and Triggs (2007) suggest neighbour interaction is where "ideas bump up against each other" (p.187).

What is important for this research study is the fact that, as Nielsen and Triggs (2007) point out, decentralized control is only legitimate, "as long as individuals accept shared control and responsibility within the distributed system. The proceedings are not directed" (p. 186). This is a critical point for this research study, one that will be explored later in my thesis. In addition, for this reason, it important to examine all three networks; distributed, centralized and decentralized.



**Figure 1. Distributed Network**

Distributed networks, as described by Davis and Sumara (2008) are, "tremendously robust which is good if rapid response is not an issue but have poor communication and bad adaptability" (p. 20). Figure 1 (Varnelis, 2007) to the left illustrates the communication lines of a distributed network. Unlike decentralized networks, that are networked for interdependency and shared responsibility, all the nodes in a

distributed system are networked on the basis of equality; they are all the same length and independent of each other (Varnelis, 2007).

**Figure 2. Centralized Network**

The centralized network described by Davis and Sumara (2008), as having, "the advantage of efficient communication but the disadvantage of being no smarter than the central hub and are not very robust" (p.19). All the nodes are dependent on the central hub to receive



and send information, and therefore, obliged to follow the central nodes direction. As the figure (Varnelis, 2007) illustrates the out laying nodes only communicate with the central hub.



**Figure 3. Decentralized Network**

The decentralized network is described by Davis and Sumara (2008), as being the “finger print of a knowing [and] learning system” (p.21). As they suggest, the decentralized network “balances efficient communication [with a] robust structure [and is also] adaptable (p.21). Decentralized networks, as illustrated in the figure to the left according to Varnelis (2007), form a hub and spoke network where the nodes are seen as equitable.

As Davis and Sumara (2008) suggest, decentralized networks are not about the dominance and control of one over the other, but rather connecting with each other, and each other’s ideas, that combine to create a smarter collective system.

If TGfU is to be successful then the factors that support its implementation have to incorporate into a nested learning network of a complex system that encourages coherence among its agents but also diversity, robustness, and self-organization through decentralized control.

### **TGfU in Canada**

If we turn our attention away from complexity thinking and instead think of the situation that faces physical educators in Canadian schools, what is their position? Singleton (2009) argues that physical education has been dominated by behaviourist theory of scientific logic. She states, “it is evident that the curriculum influenced by technocratic rationality does not support the diverse needs of students in modern-day secondary physical education programs” (p. 333). She believes that there is a need for change. Change that accommodates all students’ needs, and argues that there is a place for TGfU, which she advocates as being the vehicle that funnels the constructivist theory into the

physical education curriculum. Singleton explores the academic debates over issues such as the dominant discourses, the processes of knowledge production, and the preferred theoretical perspectives on the relationship between power and knowledge. These debates, Singleton (2009) suggests, have resulted in some curriculum change in the guise of TGfU, and even though teachers can see the benefits of constructivism in physical education they still have reservations. Their main concerns involve having to know all the characteristics of the games categories, and practice of the basic tenets of constructivism. As defined in chapter one, within the TGfU approach, games are divided into four distinct categories, each dependent on the complexity of the game. Singleton (2009) points out that the teachers must know the characteristics of each category to be able to develop modified games that isolate particular tactical skills and strategies. For example, if the lesson involves the teaching of the net/wall game of tennis, then tactical strategies such as exaggeration of court depth and width are useful to help the students' understanding of these tactical concepts. For the teacher to utilize the TGfU approach, their role becomes one of facilitating rather than directing student learning through the key components of constructivism, that of questioning and presenting problems for the student to solve, and scaffolding that learning with appropriate developmental activities.

As physical educators find success within the TGfU approach and there is a shift in their beliefs about why and what to teach in P.E. (Light & Butler, 2005), there is a concern that their development and implementation will meet with resistance from other teachers and the physical education establishment (Singleton, 2009). One way to combat this concern is to implement workshops. The Wright's et al. study reported a positive reaction from qualified teachers towards tactical games approach mentoring training in-service workshops. Many studies have shown that teachers responded positively to the tactical games approach (Oslin & Mitchell, 2006); therefore, it is important to support them in their quest to implement it into their teaching practice. Even though mentoring is a good first step, on-going and networked workshop through Professional



development days, PETE associations and conferences are vital to sustain a teacher's commitment to TGfU.

## Chapter Three: Methodology

### Personal anecdote

*There is no greater feeling than working together purposely towards a goal. I have been fortunate enough to have played on plenty of teams growing up and later in adult life, where team building and working towards success has always been the best part of playing together. As a university student working in groups was an essential part of the school assignment. I believe that playing games and working together in a team atmosphere made me a better student and person later on in life. The constant negotiation, sharing of ideas and responsibilities and then critically thinking about how to reach our goal, was an important part of my education. And, I believe vital for a successful PE class. If I reflect back, it was definitely playing games that developed my group dynamic skills and my ethic of hard work.*

### Introduction

This chapter lays out the research study methodology. I will first locate my position within the research, then explain the research design, which includes a timeline of the research steps and data collection, followed by a description of the participant selection, and a table that contains all of the participants (teachers, primary colleagues, and principals) and finally a description of how the data was analyzed.

### Researcher's Location

I first discovered and researched the TGfU model in the last year of my Human Kinetics undergraduate degree, for my own reasons, disenchanted with other Human Kinetic courses. TGfU really sparked my interest as an alternative method to teaching games. The concepts of the method seemed, to me, to make such simple sense. The discovery of TGfU really stimulated my academic attention towards the assumptions concerning physical education. This included why and for what reason TGfU had not been introduced as an alternative teaching method in the physical education field, or integrated with other teaching practices.

As an advocate of the tactical games approach to teaching games, and a strong proponent of TGfU, I locate myself within the constructivist theory of teaching. Therefore, I must be aware of the biases I bring into this research study and be conscious of my own location within the subject area. I felt it was also

critically necessary to be aware of the research questions asked and be cognizant of how I ask them of my research participants.

## **Research Questions**

Primary research question:

- What are the factors that help physical educators implement new initiatives such as TGfU into their teaching practice?

Secondary research questions:

- What are the participants' perceived biggest rewards of using TGfU?
- What are the contributing factors that would encourage other teachers to implement TGfU into their teaching practice?

## **Research Study Design**

The primary focus for this research study is to uncover the factors that help teachers implement new initiatives therefore it was necessary to use an interview format. By using an audio recorder to record the interviews, I was able to focus on what they were saying without worrying about writing it down. This meant that accurate transcriptions were vital to make sure all the data was recorded. The use of a Teaching Perspective Inventory (TPI) created a starting point for not only our interview discussions but for the teachers to think about their teaching philosophy.

Five physical educators were involved in this research study. This process included the completion of a TPI followed by a discussion of the teachers' teaching philosophy and responses to select questions in an interview format. Each participant was interviewed twice, and once completed their primary colleagues and principal were then interviewed.

For the purpose of this research study, philosophy defined as, "a particular system or set of beliefs reached by the branch of knowledge that deals with the principles of a particular field or subject" (Canadian Oxford Dictionary). Tsangaridou (2008) suggests that it is important to recognize that teaching involves choice, evaluation, and judgment, and therefore established within a set

of explicit and implicit beliefs. She further suggested that all teachers' educational beliefs about their work, students, and subject matter is encompassed in a broader general belief system. She states that educational beliefs refer to, "beliefs about confidence affecting student performance, about the origin of knowledge, about causes of teachers' or students' performance, about perceptions of personal feelings, about confidence in performing specific tasks, and about specific subject-matters or disciplines" (p. 132).

Betchel and O'Sullivan (2007) in their article, *Enhancers and Inhibitors of Teacher Change Among Secondary Physical Educators* highlight previous research that has suggested that primary colleagues and principals play a role in the implementation of new initiatives and teacher change. They draw attention to Sparkes' (1988) research study that looked at the micro politics of schools in relation to physical education. He found that when teachers were not united in their efforts for change, it became increasingly difficult for effective change to take place. In another research study, Faucette and Graham (1986) suggest that when a principal is accepting of a teacher's implementation of new initiatives and provides support, it contributes to the success of the implementation. This research literature was therefore important to take into consideration when addressing the research question.

## **Data Collection**

### Teaching Perspective Inventory (TPI)

The TPI is designed to give perspectives on teaching. It is an inter-related set of beliefs, and intentions related to knowledge, there are five perspectives: Transmission, Apprenticeship, Developmental, Nurturing, and Social Reform

**Table 1: Teaching Perspective Inventory**

<b>Perspective</b>	<b>Effective teaching</b>
<b>Transmission</b>	Requires a substantial commitment to the content or subject matter, learners are expected to learn the content in its authorized or legitimate forms and teachers are expected to take the learner systematically through a set of tasks that lead to mastery of content.
<b>Apprenticeship</b>	Is a process of enculturating students into a set of social norms and ways of working, learning is more than building of cognitive structures or development of skilled competence. It is, as well, the transformation of the learners' identity that occurs as the adopt language, values and practices of a specific social group.
<b>Developmental</b>	Must be planned and conducted from the learner's point of view, learners construct their understanding, rather than reproduce the teacher's understanding. Teachers must genuinely value learners; prior knowledge and understand how they think about the content before presenting new material.
<b>Nurturing</b>	Assumes that long-term, hard, persistent effort to achieve comes from the heart, as well as the head, primary responsibility of teacher is to find a balance between caring and challenging. To do this they promote a climate of caring and trust, helping people set reasonable but challenging goals, and supporting effort and achievement, without sacrificing self-efficacy in favour of academic achievement.
<b>Social Reform</b>	Seeks to change society in substantive ways, learner must come to believe that the guiding ideals are as important to them as they are to the teacher. Social reform teachers seek not just to interpret the world, but to change it in ways that correspond to their ideas.

(Collins et al, 2009)

The TPI profile initiated a starting place for discussion during the interview sessions and provided questions pertaining to any changes. The purpose here was to initiate discussion of any changes that might have occurred in their teaching beliefs.

The TPI was completed three times:

- before a two-week Masters course
- immediately after the course
- following two month experimentation of TGfU

The Masters course will be considered as an intervention in the reflective process of the physical educator's teaching philosophy, and initiate a discussion about changing ideas of what is important to teach.

### Participant Interviews

Two interviews were conducted:

- first interview was conducted late September and early October
- second interview was conducted at the beginning of November (with the exception of one in December, 2009)

(A copy of the consent forms can be found in Appendix A; a copy of the questions can be found in Appendices B and C)

### Primary Colleague and Principal Interviews

- Interviews of up to 20 minutes with the participants' primary colleagues were conducted in November, 2009
- Interviews of up to 20 minutes with the participants' principal were conducted in December, 2009 (with the exception of one in March, 2010)

(A copy of the consent forms can be found in Appendix D – primary colleagues, Appendix E – principals, a copy of the questions can be found in Appendix F – primary colleagues, Appendix G - principals)

Teachers have to work in a community of professionals within the school environment. According to the article by Davis and Sumara (2001), *Learning communities: Understanding the workplace as a complex system*, schools can be seen as complex systems that are made up of sub-systems. They suggest that although teachers work within their professional autonomy to create a healthy workplace, individuals need to work together within the collective of the teaching body. It was therefore advantageous for me to interview the participants' primary colleague and principal to investigate further the factors that help the physical educators implement TGfU into their teaching practice. As secondary participants, and knowing that Principals are extremely busy professionals with many demands on their time, I limited these interviews to 20 minutes. The

majority of interviewees stayed within this time. One primary colleague interview did last almost an hour, but he made some valuable comments that contributed to the research results.

There are several reasons why a colleague and principal may be receptive to an interview of this nature - for example: involvement in a research study, interest in new and innovative ideas, and support of their colleague's quest to try something new. Without a reason one primary colleague did decline to be interviewed.

## Timeline

**Table 2: Research Steps**

Date	Activity
Beginning July, 2009	TPI 1- completed before a two week Master's course
Late July, 2009	TPI 2 - completed immediately after the two-week Master's course
Late September and early October, 2009	Interview one - with the 5 teacher participants
End of October, 2009	TPI 3 completed
End of October beginning of November, 2009	Interview 2 – participants, after the participants had 8-9 weeks to implement aspects of TGfU into their teaching practice. (With the exception of one participant who had to interviewed in December due to geographical location and weather conditions).
November and December, 2009	Interview - Primary colleagues
December, 2009	Interview – Principals (with the exception of a Vice Principal interviewed in March. The vice principal was interviewed in favour of a new Principal who started her position in January, 2010).

The progress was monitored and feedback gathered through various stages: During the 2 week graduate course participants were asked to answer the following 2 questions in a daily log:

- What surprised you today?
- What did you like?

Keeping a logbook is a type of self-reflection; the participants reflected on what surprised them, and what they liked each day. Self-reflection or personal reflection can be incorporated within the broader notion of self-study, where there is a relationship between self-study and learning (Clarke and Collins, 2007). The purpose of these questions was to provide some common ideas and reflections, which in combination with the TPI results, were applied to the interview questions. Unfortunately, not all the participants were able to fulfil this part of the study, citing time as a limitation.

- The pre and post intervention TPI results provided a rich source of material pertaining to the participants' teaching philosophy. These were subsequently used to inform some of the questions for both the first and second interview.
- After the participants had time to implement the TGfU method into their teaching practice, they completed a third TPI. The third TPI results provided some insight into the level of change in the participant's teaching philosophy. This third TPI was used in combination with the first two TPIs, and the first interviews to structure the questions for the second interview.
- Interviews with the participants' primary colleague provided valuable feedback regarding supporting factors that help facilitate the implementation of TGfU into their teaching practice from a teaching perspective.
- Interviews with the participants' principal helped to inform the inquiry question further, and identified supporting factors that help facilitate the implementation of the teaching method of TGfU into the participants' teaching practice from an administrative perspective.

The assumption for implementation was that a time duration of just 8-9 weeks was limiting for each participant to experiment with the TGfU approach. This was especially true in regards to teaching several lessons or even units



within one class. How much they accomplished was found to be dependent on the individual participant based on time, students, equipment, facility, and their own comfort level using the TGfU method.

## **Participants**

The potential participants were a group of Masters student who had enrolled in a Master's physical education cohort that started in July 2009, at the University of British Columbia and attended a two week TGfU focused Master's institute. A letter was sent to each member of the cohort explaining the parameters of the research study and selection was based on the first to reply. (Requested letter – Appendix H)

The criteria are:

### **Gender**

- three male physical educators
- two female physical educators

As noted by Collins et al. (2009) gender plays a role in a teacher's teaching philosophy. He noted that women scored significantly higher scores than men in the Nurturing perspective of the TPI profile; therefore, I believe it was important for this research study to select participants from both genders.

### **Years of experience**

- 10 or more years of teaching experience
- 6 or less years of experience

As noted by Butler (2005), teachers move through 5 stages of teaching, with this in mind I believed it was important to have teachers in various stages of their career. This allowed for a broader scope of what factors help the implementation of new initiatives, for example, the needs of a newer teacher can differ from ones who have been teaching for fifteen years.

The participants were interviewed twice; in the first interview each participant was asked a set of generic questions, and in the second interview the

participants were asked a mix of generic questions and those based on the answers from their first interview. The interviews lasted from 30 minutes to up to an hour.

Background information

**Table 3: Participant's Background**

	Pseudonym		Primary Colleague	Principal
1	Margaret	Female elementary physical educator, who has been teaching for 29 years in both the public and private school systems at the elementary level. She currently is teaching in an independent school.	Amanda	Anne
2	Amanda	Female elementary physical educator, who has been teaching for 25 years in both the public and private school systems at the elementary level. She currently is teaching in an independent school	Margaret	Anne
3	Noah	Male secondary physical educator, who has been teaching for 6 years in both the public and private school systems at the secondary level. He currently is teaching in an independent school.	Kathryn	Nigel
4	William	Male secondary physical educator, who has been teaching for 5 years in the public school systems at the secondary level. He currently is teaching in a public school.	Martin	Robert
5	Ben	Male secondary physical educator, who has been teaching for 7 years in the public school systems at the secondary level. He currently is teaching in a public school.	Declined to be interviewed	Joanna

Four of the teachers teach in the Vancouver Lower Mainland and one teaches in the Howe Sound district.

## Data Analysis

The procedure for the data analysis was as follows:

### Processing the Data

- Collecting - Each interview was recorded using a hand held audio recording device.

- Editing - After each interview round (participants interview 1, participants interview 2, primary colleagues, principals) the recordings were transcribed and then emailed back to the individual participant in a timely fashion for validation of authenticity. Once validation was received the transcripts were loaded into the NVivo 8, a Qualitative data analysis software program for coding.
- Coding - What to code in the transcripts was determined by first identifying key words by a word frequency search, and continual re-reading of the interviews. The main ideas were then coded into groups and relationships were established.
- Sampling – the groupings were organized into eight general themes; these were then condensed into four main themes, that I have termed factors.

### Mapping the Data

The results of the participants TPI profiles in both table form and summarized descriptive text form are detailed.

### Interpreting the Data

The interpretation of the data involved review of the data, and building relationships and connections between the selected factors – and the stakeholders and the research literature. These relationships were then mapped out on two large pieces of paper. (See Appendix I)

### Presentation of Results

- Summary – the research findings are summarized in the four sections of the TPI profiles, and the interview discussion from participants, primary colleagues, and principals.
- Interpretation – the findings are presented under the four interrelated factors, each factor contained examples drawn from the participants interview, primary colleague interviews and the principal interviews.

- Integration of research and theoretical perspective – the four factors are framed within the theory of complexity thinking.
- Recommendations – further study is suggested with additional lines of enquiry.

### Ethics

As of September 10, 2009, this research study had the approval to proceed from the UBC Research Ethic Behavioural Research Ethic Board, H09-01595. (Please see Appendix A)

### Participants

All the participants were asked to sign a consent form, and were given the option to withdraw from the research study at any time. One participant did withdraw in September 2009, and was replaced. Each interview was recorded on an audio recorder, and all the participant's identities were kept confidential with the use of pseudonyms. Participants were given the opportunity to read, edit and confirm transcriptions from their interviews. On completion of this research study the participants will be given the opportunity to review the final thesis prior to publication. There are no foreseeable potential risks to this research study.

### Results

All the data that has been stored on computerized files (recorded interviews) will be locked in a filing cabinet, in room 2102 of the Scarfe Building. These documents are kept for 5 years before being shredded and the audio tapes destroyed.

### Reliability

It is impossible to replicate the research findings of a study of this nature when subjective participants are involved. It is possible though to consider that if the same questions were asked of a similar group of teachers, going through a similar process, the results would be broadly the same and the results therefore would be dependable. Dependability as noted by Golafashani (2003), is an essential criterion for quality in a qualitative paradigm, it accounts for the ever-

changing context within the research study. I believe the dependability of this research study would be substantiated with further studies.

### Generalizability

Even though the nature of this research question is very specific to these research participants, the same design can be used for other research groups. It addresses the philosophical ideas of teachers who are implementing new initiatives into their teaching practice. Therefore, this type of research study has the potential to be used in other teaching subject areas or in other academic teaching programs as it pertains to the TPI and data collection through interviews. For example, other physical education initiatives, or even pre-service teachers implementation of new ideas gathered from their pre-service education courses, could be incorporated into their teaching practice.

### Validity

The accuracy of the research study is identified through various types of validity. The concept of validity refers to the degree to which the research findings give a true measurement or in this case true representation of the educational reality of the qualitative research paradigm (Palys & Atchison, 2008). Creswell and Miller (2000) suggest that there are various types of validity that are dependent upon the lens the inquirer uses to establish validity in their study. For example, the lens of researcher, participant, or the people external to the study. Using the lens of the researcher, triangulation validates these research findings.

### Triangulation

Triangulation is as Creswell and Miller (2000) indicate, “a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study” (p. 126). Triangulation of data was apparent through the collection of data at different times and from different sources. The TPIs were collected at three different stages and the participants were interviewed twice, as well as their primary colleagues and principals. Finally, the researcher’s field notes were used to

cross-reference interview material, ideas, and themes within the research findings.

#### Criteria for Evaluation

This research study will be evaluated based on the research findings and the establishment of those factors that support the teacher's implementation of TGfU into their teaching practice.

#### **Communication of Results**

The most appropriate way to share the research findings from this study will be to:

1. Share the results with the British Columbia physical education community at forums, conferences, Pro-D days.
2. Summarize the research study and submit it for publication for British Columbia teaching journals and magazines.
3. Summarize the research study and submit it for publication in national and international physical education, education, and sports journals.

## Chapter 4: Presentation of Research Findings

### Personal anecdote

*As a new teacher, typically you spend your first few years as a teacher-on call, an initiation period so to speak. Like many I spent the first two years teaching PE to various students of various grades. There are times when this can be a positive or not so positive experience. One experience stands out in my mind clearly as positive. In this instance, everything in the class seemed to just click, and the students and I really enjoyed our time together, where learning and participating moulded together within a positive state of being. It was a time, not unlike others, when I did not follow the teacher's directions/instructions and instead taught using the TGfU method. I introduced an adapted soccer game, and surprised the students by asking them questions and they responded with enthusiastic answers. And, for this class it worked wonderfully, so much so that when the class had to finish the students were reluctant to stop, and the teacher's assistant came up to me with praise and compliments. It is these times, times when TGfU really makes a difference, that sustains my motivation to advocate it as one alternative for teaching games.*

### Introduction

Divided into three parts, part one of the chapter will provide a brief overview of the research findings as displayed in the participants' Teaching Perspective Inventory (TPI) profiles and discussed in the participant, principal and primary colleague interviews. Part two presents the TPI profiles for each participant in table form, followed by a short discussion of each, as well as a concluding group comment. Part three of the chapter is divided into the four sections, each discussing one of the four main research findings, communication, professional development, teacher and student motivation and time.

### Summary of Findings

#### Teachers - Teaching Perspective Inventory

The Teaching Perspective Inventory (TPI), as indicated in chapter three is a starting place for the participants to talk about their teaching beliefs and philosophies. Although the TPI results did prove to be valuable and created much discussion regarding TGfU and how it related to their teaching perspectives, it was not intentionally used as an analytical tool to measure changing teaching

beliefs. The interview initiated discussions pertaining to the change or lack of change that appeared on each of their three TPI profiles. This then provided a meaningful segue into a discussion of the factors that help teachers make change, and how new initiatives can be implemented.

#### Interviews - Participants

The participants were interviewed twice, once at the beginning of the school year, and then about five to six weeks later. The first part of interview one asked questions relating to the results of the first two TPI profiles. The findings show that the participants had previously only thought about their teaching philosophies informally and agreed that the TPI was a useful tool for further philosophical reflection. Once they had a chance to reflect on their TPIs, none were surprised to discover that the Nurturing perspective had dominated their profiles. However, they were surprised by other perspectives holding stronger or weaker positions of influence within their profiles. The interview questions also explored the participants' experimentation of TGfU in their classes, with varying degrees of success. Three of the participants struggled with the idea that the questioning component of the TGfU limited the students' cardiovascular component of the class. One of the participants struggled with the tactical first versus technique first argument. In comparison, one of the participants termed himself an experimental/emergent focused teacher and found TGfU to fit well within the scope of his teaching philosophy. They all had reservations about how much TGfU to initially incorporate into their teaching, suggesting that it takes time, experience and a certain level of learning, as well as a degree of philosophical reconciliation before they would feel comfortable implementing it fully into their teaching. The overall impression from all the teachers, was that TGfU was a step in the right direction for teaching games in their physical education classes.

The second interview concentrated on direct questions concerning the factors that supported their implementation of TGfU. The questions were mostly generic, but some also drew from the first interview discussion. The interview



started with a short discussion about the third TPI profile, and the changes that transpired within and between the three TPI profiles. This then lead into the first few questions, which concentrated on their perception of TGfU and whether their perception had changed since the first interview, as well as the reaction and response of their students. The final part of the interview concentrated on the factors that supported their implementation of TGfU. The main findings suggested that the more the teachers implemented TGfU into their classes the greater the rewards for both them and their students. Even so, some were still reluctant without more formal TGfU knowledge (resources, unit plans, books etc.), and felt they needed more time to experience and/or practice the TGfU concepts. The participants, therefore, interwove TGfU with other more comfortable and traditional teaching methods. For example, while the use of modification and exaggeration of games was successful for all of them, several of the participants voiced that they used questioning to varying degrees. The need for more practice and/or experience suggests that professional development is a factor that supports the desire of the teachers to implement TGfU. Many of the participants discussed it as an essential factor, as well as the need to have physical education specialists at the elementary level. The secondary teachers voiced their concerns that the tactical and technical knowledge of new grade 8 students was questionable. Moreover, they suggested that it would be a challenge for generalized elementary teachers to implement TGfU into their teaching without either thorough knowledge of games, or extensive professional development.

#### Interviews - Primary Colleagues

The primary colleagues interviews help determine the level of support for the participants. Two of the participants teach at the same elementary school and comprise their department's teaching staff; therefore, each was interviewed as the others primary colleague. One of the participant's primary colleagues declined an interview. Each primary colleague answered four generic questions. The questions related to the support from the school community, as well as their

role towards their primary colleague, how the primary colleague perceived physical education fitting into their school philosophy or mission statement, and whether professional development helps sustain a teacher's ability to implement new initiatives.

The interview findings suggest that support came in a variety of ways and in varying degrees. Administrative support such as funding, release time for professional development and intellectual discourse played an influential part for some. While for others, very little if any communication occurred between the teachers and administration, and this created a feeling of isolation for the teacher. The primary colleague's role in supporting the participant intellectually was seen as vital for some, while not for others. The philosophical question created a similar reaction, some viewed physical education as a valuable part of the school community, while others less so. The primary colleagues viewed professional development as critical for supporting the participant's implementation of new initiatives, with some discussion of what form that might take. All the primary colleagues discussed the need for physical education specialists at the elementary school level, especially if TGfU was to have any impact. They were concerned that the generalized elementary teachers lacked the games knowledge, skill, and confidence needed to teach TGfU. A solution suggested by one colleague was to provide on-going TGfU focused professional development workshops.

#### Interviews - Principals

Similar to the primary colleagues, the principals' interviews determined the level of support for the participants. Three principals and one vice-principal were interviewed. As explained above, two of the teachers taught at the same school and therefore had the same principal. One of the principals was brand new and therefore extremely busy, and it was thought that the vice principal with more relative experience was a better option. As suggested in the literature review, principals are influential in supporting those educators who want to implement

change in their teaching. Creating the time and space as Hargreaves (2002) suggests, for professional development and discourse is key.

The principals answered the same questions as the primary colleagues, which included the role of the principal played in supporting the participants' implementation of TGfU. The findings show that all the principals thought that providing time for intellectual discourse was paramount in supporting the participants. There was a strong emphasis placed on the teaching method of TGfU meeting the school philosophy, or more specifically the principal's teaching vision for the school. Unfortunately, their vision was not discussed in detail, only that PE was a valuable part of the school philosophy because of the health, academic, and social benefits of physical activity. All the principals talked about the importance of professional development and the need to support teachers in whatever way they could. Support varied depending on the school. Three of the principals talked about creating professional or learning communities within the physical education department for intellectual discourse to take place. This meant the teachers were either given space in the timetable to meet their colleagues or met during their lunch break or after school. They all talked about providing funding for professional development and resources where applicable.

### **Teaching TPI Profiles and Discussion**

It will be useful to provide some important details about the TPI profiles that will help understand the participants' teaching perspective profiles. The TPI involved the participants completing an on-line series of questions regarding knowledge, learning and the role and responsibilities of being a teacher (Pratt, 2002). Once this is completed the program automatically calculates their TPI scores and displays the results in a perspective profile (Pratt et al., 2001). The perspective profile presents the scores within the five different teaching perspectives: Transmission, Apprenticeship, Developmental, Nurturing, and Social Reform. According to Pratt et al. (2001), it is common for respondents to have one and at times two dominant perspectives. Calculated using the mean of the five TPI scores, any scores that falls one standard deviation or more above

their personal mean are seen as the dominant perspectives. It is also common to hold a recessive perspective, that is, a score that is one or more standard deviations below their personal mean (Pratt et al., 2001). In the tables below, the participant's highest score is labelled dominant, and therefore recognized as their dominant teaching perspective; the second to highest score is labelled the dominant back-up and therefore is their back-up dominant teaching perspective; and the lowest score is their recessive teaching perspective, and therefore recognized as their recessive teaching perspective. The TPI results give an indication of which teaching perspective the participant gravitates towards, it is not absolute, just an indication.

#### William's TPI Results Discussion

**Table 4: William's Teaching Perspective Inventory Results**

Teaching Perspectives	TPI #1 (prior to 2 week institute)	TPI #2 (post 2 week institute)	TPI #3 (8-9 weeks after start of school year)	Difference between TPI #1 and #2	Difference between TPI #2 and #3	Difference between TPI #1 and #3
Transmission	32 (b <sup>d</sup> )	35 (b <sup>d</sup> )	30 (b <sup>d</sup> )	+3	-5	-2
Apprenticeship	30	30	29	0	-1	-1
Developmental	28 (r)	27	26 (r)	-1	-2	-2
Nurturing	39 (d)	37 (d)	38 (d)	-2	-1	-1
Social Reform	29	21 (r)	28	-8	-1	-1

Key: dominant score - (d), back-up dominant score - (b<sup>d</sup>), recessive score - (r)

#### Comments

William's dominant teaching perspectives score is consistently nurturing, this is in accordance with Pratt & Collins' (2002) research suggests that physical educators have a tendency to score higher in the nurturing perspective than any other teaching perspective. Transmission, which is William's back-up dominant perspective, is again consistent with the research, which suggests that physical educators score equally as high within this perspective. William's recessive

teaching perspective fluctuates between Developmental and Social Reform and again is not surprising, as research has shown that physical educators score low within these teaching perspectives (Collins et al., 2003). Even though William had some considerable increases and decreases in his three TPI scores, of note is Social Reform -8 after TPI #2, and Transmission -5 after TPI #3, his final scores in fact have made very small decreases compared to his original scores and compared to other participants' final score comparisons.

In the first interview, when I asked William whether the results from his first two scores matched his teaching, he replied that he believed that they did match, and suggests that the differences between the first two TPI scores may have been due to his teaching load at the time he completed TPI #1:

The one reason I think for the difference in the Social Reform, and this might, is that when I did this it was near the end of the school and I was still teaching psychology, and urh I think my answers are a little bit different in my approach in classroom, where as I think when I did this one I was thinking more only about PE because we had just finished the courses, but I still think it is quite accurate in terms of my approach I wasn't, I don't think it would, looking at the results it wouldn't make me change anything that I was doing um (William, 1/10/09).

The research has shown that there is a tendency for teachers in the Arts to score higher within the Social Reform Perspective than other teachers (Collin et al., 2003). I suggest this might explain the drop from 29 to 21, when we consider that William completed TPI #2 straight after the summer institute, where he was completely immersed in TGfU theory, practical and research.

When asked in interview two what he thought about his overall scores, and having had a chance to experiment with the TGfU teaching method, William explained that he thought his scores did not waver greatly. He commented that when completing his third TPI, he thought the of Social Reform questions in terms of physical education rather than psychology. As he states, "I definitely found that on the questions around what I thought were social reform I was thinking of those questions more now in terms of changing kids fitness, health and using that as social reform" (William, 04/11/09). This suggests that when completing the TPI profile, teachers who have two teaching areas find it

challenging to combine the two subject areas as one in relation to a teaching perspective.

### Margaret's TPI Results Discussion

**Table 5: Margaret's Teaching Perspective Inventory Results**

Teaching Perspectives	TPI #1 (prior to 2 week institute)	TPI #2 (post 2 week institute)	TPI #3 (8-9 weeks after start of school year)	Difference between TPI #1 and #2	Difference between TPI #2 and #3	Difference between TPI #1 and #3
Transmission	26	32	28	+6	-4	+2
Apprenticeship	35 (b <sup>d</sup> )	37 (b <sup>d</sup> )	37 (b <sup>d</sup> )	+2	0	+2
Developmental	32	36	35	+4	-1	+3
Nurturing	38 (d)	40 (d)	40 (d)	+2	0	+2
Social Reform	20 (r)	29 (r)	23 (r)	+9	-6	+3

Key: dominant score - (d), back-up dominant score - (b<sup>d</sup>), recessive score - (r)

### Comments

Margaret's dominant, back-up dominant, and recessive TPI scores are all very consistent with her results, staying within the same teaching perspectives. Her dominant perspective of Nurturing was consistent with the research for physical educators and as a female teacher; females score significantly higher than men within this perspective (Collins et al., 2003). Her back-up dominant score within the Apprenticeship perspective was also very consistent. Within the Apprenticeship perspective, Collins et al. suggest that their research found no differences among the teaching disciplines, all generally scored a high overall mean average. Further, they suggested, "teaching in any of the academic disciplines can profit by well structured apprenticeship experiences such as internships, career days, or intelligently crafted work projects" (p.5).

Margaret discussed the idea of relating the teaching discipline of physical education, to her career and life experiences beyond the school. She also talked about the influence she has with her students and how best to use it:

You know I've always believed, that um, I've always understood the influence I can have with children. So I think that's always been part of my teaching and that includes you know drawing reference to any teaching opportunities, life learning opportunities that come along (Margaret, 01/09/09).

In the first interview when Margaret discussed her general over all scores, she stated that she was surprised at how close the teaching perspectives all were. She also commented on her recessive score for the social reform perspective, a score that changed dramatically in her second TPI. As she suggests, when completing her first TPI, she did not quite understand how Social Reform fit into the teaching perspectives but then after completing the two week summer institute she said it became more apparent:

The, you know the developmental, the apprenticeship was quite high I thought on that one and um I wasn't surprised by the social reform because as you do that test it just doesn't seem part that it should be part of it all, but then um with the second um one certainly seen the social reform I think that just from understanding it better, that um it came up and certainly interesting seen my transmission came up as well as development, there so many parts to oneself as, as a teacher. (Margaret, 01/09/09).

It is interesting to listen to her talking about Social Reform in our second interview, where she reiterates these points but more clearly, she seems to have come to reconcile how she feels about the Social Reform teaching perspective:

I think right after the course of just what the impact we have as a teacher of what we say and what we do and urh and it is interesting you know I certainly agree with how we can teach you know the life skills and impactful, urh we can develop character with the kids, but I was noticing, yes I was attentive to that when I did it the third time and just um I think I found the TPI wording sometimes is strong, so strong so I sort of react, well no I don't do it like that, that strongly but (Margaret, 02/11/09).

Similar to William, Margaret's scores did not dramatically alter from the original TPI scores compared to the third TPI score. Her TPI scores went up rather than down and with a little more variation, by 2 or 3 points. With the biggest changes happening after the two week summer institute, most notably an

increase of 9 in the Social Reform teaching perspective and an increase of 6 for the Transmission teaching perspective. Further change in her third TPI scores, although not as substantial did seem to counteract those previous changes. Margaret did not comment on her Transmission perspective in her second interview. Therefore, I cannot comment on that perspective score change.

## Noah's TPI Results Discussion

**Table 6: Noah's Teaching Perspective Inventory Results**

Teaching Perspectives	TPI #1 (prior to 2 week institute)	TPI #2 (post two week institute)	TPI #3 (8-9 weeks after start of school year)	Difference between TPI #1 and #2	Difference between TPI #2 and #3	Difference between TPI #1 and # 3
Transmission	36 (b <sup>d</sup> )	30 (r)	35	-6	+5	-1
Apprenticeship	34	38 (b <sup>d</sup> )	39 (b <sup>d</sup> )	+4	+1	+5
Developmental	35	35	34	0	-1	-1
Nurturing	42 (d)	44 (d)	44 (d)	+2	0	+2
Social Reform	30 (r)	33	29 (r)	+3	-4	-1

Key: dominant score - (d), back-up dominant score - (b<sup>d</sup>), recessive score - (r)

## Comments

Noah's dominant TPI teaching perspective is consistently Nurturing and is as mentioned earlier, compatible with Collins et al. (2003) research findings for physical educators. It is interesting to note Noah's back-up dominant and recessive results. Before the summer institute in his first TPI, his back-up dominant score was Transmission and recessive was Social Reform. In the second TPI, after the summer institute his dominant back-up changes to Apprenticeship and his recessive becomes Transmission. Then, in the third TPI his back-up dominant stays within the Apprenticeship perspective, but his recessive score is back within the Social Reform perspective. Noah explained the reason for his second TPI results and especially the Transmission score:

I have a pretty good idea why, yes so they said PE teachers generally



across the board are mainly transmission, so I realized I didn't want to be lumped in with some other category like that and I also realized that transmission for PE doesn't really transmit understanding so with the Teaching Games for Understanding model I really tried to drop that down and get some problem solving happening (Noah, 01/09/09).

When discussing Apprenticeship and Social Reform scores in his first interview he commented that he was not surprised with either score. Especially Social Reform because as he states, "[I am] not surprised it was at the bottom just because I never been big into changing the world per se, I think it is important to advocate for that but I don't believe that I am preaching it all the time" (Noah, 01/09/09).

In his second interview, it is interesting to note his explanation for his changed back-up dominant score of Apprenticeship, which was up one from TPI #2 and his recessive Social Reform perspective score, down four from TPI #2. In addition, his Transmission score went up four from TPI #2.

I think that is because I realize, I didn't know what it was when I did the first TPI and then I read the profile the full description of what it meant and then I realize that in PE there are quite a few, you know occupational options for the kids ...And, social reform went back down again hey...Umm, honestly I have no real reason why that could be the case, I, I definitely believe trying to change society for the positive, although I guess that is not my priority, my priority is to be a teacher/coach/parent first (Noah, 30/10/09).

When looking at the differences between Noah's TPI #1 and TPI #3 results, like William, his scores have not changed drastically, only by one or two points, except of course for Apprenticeship, which has increased by 5 points. Again, as previously seen, there is fluctuation within the teaching perspectives after the summer institute; here William shows the philosophical shift in thinking about his teaching. It may be assumed that the reality of being back in school for a month or so, that there is a tendency to re-construct ideas for the school and classroom/gymnasium environment, rather than the theoretical world of academia.

## Amanda's TPI Results Discussion

**Table 7: Amanda's Teaching Perspective Inventory Results**

Teaching Perspectives	TPI #1 (prior to 2 week institute)	TPI #2 (post 2 week institute)	TPI #3 (8-9 weeks after start of school year)	Difference between TPI #1 and #2	Difference between TPI #2 and #3	Difference between TPI #1 and #3
Transmission	34	35	34	+1	-1	0
Apprenticeship	36	37	36 (b <sup>d</sup> )	+1	-1	0
Developmental	38 (b <sup>d</sup> )	38 (b <sup>d</sup> )	35	0	-3	-3
Nurturing	45 (d)	42 (d)	40 (d)	-3	-2	-5
Social Reform	33 (r)	27 (r)	25 (r)	-6	-2	-8

Key: dominant score - (d), back-up dominant score - (b<sup>d</sup>), recessive score - (r)

### Comments

Amanda's results are very much inline with Collins et al. (2003) research, which showed that women scored significantly higher than men within the Nurturing teaching perspective and to a lesser extent score higher in the Developmental teaching perspective. These two perspectives are her dominant and dominant back-up scores in the first two TPIs. Again for a physical educator, Amanda's teaching perspective is dominated by the Nurturing perspective, which is consistent with the research (Collins et al., 2003). Her recessive perspective of Social Reform is, as Pratt (2002) states, a perspective that very few teachers gravitate towards. Even though her third TPI shows Apprenticeship to be her dominant back up, and not the previously shown Developmental, there is only a point difference between the two perspectives. In her first interview, Amanda was surprised to see that her Transmission score was lower than other perspectives. She added that as a Math and English educator as well as a physical educator, she thought the two more academic subject areas might dominant slightly more. She explained, "See I would have thought early on that my transmission would be really high in this one, you know being a Math and English teacher as well I thought for sure um Math you know Math background" (Amanda, 28/09/09). She

suggests that her recessive Social Reform score resulted from the fact that she taught in a “conservative” private school and displaying any type of political view was frowned upon. As she states, “there is no way I’d ever speak of a political view even if there is an election coming up, I mean talk about that the fact that there is an election coming up, but you can never um, you have to really watch what you say and watch what your actions imply” (Amanda, 28/09/09).

When discussing her Developmental scores, Amanda explained that she believed the fact that she taught different developmental ages:

Stayed the same, yes so I, I think that would be reflected in my teaching too, you know everything is developmental you know I teach a range of ages. Um you know we do the sequential development of skills here I think, certainly for PE I am not surprised that would be high as well we think of terms of ladders, we think in terms of scope and sequence, we think in terms of child development and what is appropriate at what age so I think that maybe should be consistent (Amanda, 28/09/09).

Looking at Amanda’s final score comparison, there was a considerable change with her dominant Nurturing perspective score , which went down 5 points and her recessive Social Reform perspective score down by 8 points. When I asked her to comment on her results, she first commented on her Social Reform score and reiterated that it was mostly due to teaching in a conservative school. As for her Nurturing score she responded by saying that it may be due to the fact that the first time she filled in the TPI she took her time on each question, while due to time restraints she did the following two much quicker, and she questioned whether that would make a difference with the results. While she suggested that when taking TPI #2 and 3, she was thinking as a teacher/coach rather than as a mother/teacher/coach when she completed the first TPI. She states:

You know I am looking at it as a PE teacher, I am thinking as just teacher, I am thinking of a teacher of really young kids, or I am thinking of a coach and I think maybe that has some bearing on it, but I certainly know that the last TPI I didn't take nearly as long as I did that first one” (Amanda, 02/11/09).

Which role she accommodated each time she completed the TPIs may have accounted for some of the differences, or it may have been the summer institute, it is hard to say, but Amanda profile results saw the biggest change within all the participants.

### Ben's TPI Result's Discussion

**Table 8: Ben's Teaching Perspective Inventory Results**

Teaching Perspectives	TPI #1 (prior to 2 week institute)	TPI #2 (post two week institute)	TPI #3 (8-9 weeks after start of school year)	Difference between TPI #1 and #2	Difference between TPI #2 and #3	Difference between TPI #1 and # 3
Transmission	27(r)	30(r)	24(r)	+3	-6	+3
Apprenticeship	30	32	29	+2	-3	-1
Developmental	34 (b <sup>d</sup> )	36 (b <sup>d</sup> )	34 (d)	+2	-2	0
Nurturing	37 (d)	38 (d)	34 (d)	+1	-4	-3
Social Reform	32	34	31	+2	-3	-1

Key: dominant score - (d), back-up dominant score - (b<sup>d</sup>), recessive score - (r)

### Comments

Ben's results for his dominant teaching perspective are consistent with the research literature (Collins et al., 2003) that suggests that physical educators are likely to have Nurturing as their dominant teaching perspective. And, as you can see Ben's results are dominated by this perspective. He explained this as being normal or average, "Yeh, after reading the definitions in the first time around, I thought I would be developmental and I was nurturing, and I just thought that was pretty average, pretty normal" (Ben, 03/10/09). Ben's recessive results for the TPIs are interesting and quite different from the other four participants. Unlike the others, who mostly had Social Reform as their recessive teaching perspective, Ben scored consistently within the Transmission perspective. Ben explains that he consciously did not complete the TPI thinking that Transmission was his recessive teaching perspective:

No, but also I did think of transmission that is an area of you know that's a weakness because as a teacher you don't just teach PE right. You teach other subjects as well, you're teaching children, so in some situations you need to be able, able to have transmissive skills urh because that's not my perspective maybe my skills, may need to be, I need to be aware that I need those skills right (Ben, 03/09/09).

Ben also teaches Social Studies and therefore it makes sense that, unlike the other participants, his TPI Social Reform results are quite high. Collins et al. (2003) suggest that Social Studies teachers score high within this perspective.

Ben's third and final TPI results produced two dominant perspectives, Developmental and Nurturing. When asked about this he responded by saying that he thought that he might be more developmental. Additionally, he had been thinking about other teaching focuses, which better meets his own thinking and current teaching focus:

I knew I kind of fit to start off ... because I thought about it a lot when we had to write our teaching philosophy and ... I kind of thought that I'd be developmental ... And urh instead of being nurturing, which is what I was at the beginning I think, urh then thinking about the whole thing, you know a lot of the stuff we read and everything made me think about other perspectives that I liked, like the ELF (Emergent Learning Focused) teaching, and when I imagine a learning focused teacher that is basically the closest fit to what I have been doing in the last two or three years, I would say I am more of an EFL teacher than a TGfU teacher" (Ben, 10/12/09).

Similar to the other participants, it seems that the combination of the TPIs and the summer institute has acted as a catalyst for Ben to think further about his teaching philosophy and teaching perspectives. Looking at his final results, there has not been a great deal of movement from his initial TPI scores. Significant is his dominant Nurturing and his recessive Transmission scores that have each gone down 3 points, while his dominant back-up of Developmental has not changed at all.

## Group TPI Results Discussion

**Table 9: Group Teaching Perspective Inventory Results**

Teaching Perspectives	TPI #1 (prior to 2 week institute)	TPI #2 (post 2 week institute)	TPI #3 (8-9 weeks after start of school year)	Difference between TPI #1 and #2	Difference between TPI #2 and #3	Difference between TPI #1 and #3
Transmission	31	32	30	+1	-2	-1
Apprenticeship	33 (b <sup>d</sup> )	35 (b <sup>d</sup> )	34 (b <sup>d</sup> )	+2	-1	+1
Developmental	33 (b <sup>d</sup> )	34	33	+1	-1	0
Nurturing	40 (d)	40 (d)	39 (d)	0	-1	-1
Social Reform	28 (r)	29 (r)	27 (r)	+1	-2	-1

Mean score =  $t/5$  (where  $t$  = total of scores divided by number of participants, 5). Each score rounded off to nearest whole number

Key: dominant score - (d), back-up dominant score - (b<sup>d</sup>), recessive score - (r)

**Comments**

When the participants' results are grouped, there are some collective observations that can be made. For example, when looking at the fluctuations of the scores we can see that all the perspectives except for Nurturing went up and shifted after the participants had completed the summer institution. This suggests that logically after being immersed in an intensive two week summer institute that only focused on the practical and theoretical concepts of TGfU, should challenge their previous teaching philosophies. The second interesting sets of scores to highlight are the ones taken after the participants have been in school for 8 to 9 weeks. These scores suggest a slight shift back towards their first TPI scores. This may suggest that even though their teaching philosophy has shifted after the summer institute, the reality of teaching TGfU in the school environment may be more challenging than they had first anticipated. There is the argument that theory does not always translate into practice, therefore suggesting that on-going intellectual and practical support helps those teachers who wish to implement new initiatives into their teaching practice.

Some of the participants discussed their scores mostly with inquiring questions of why their perspective scores had changed. Three of the participants after reading their TPI 1 and 2 scores purposely tried to change their teaching perspectives to represent how they wished to teach. This was especially true for participants with the significantly high or low Transmission scores. The Social Reform perspective, which was the recessive perspective for 3 of the 5 participants caused some discussion, with four of the participants saying they did not see their teaching role as changing the world or society.

The TPI was valuable for producing discussion of the participants teaching perspectives and their position on TGfU. Additionally, it provided a segue into the research questions, and discussion of the supporting factors that helped their implementation of TGfU into their teaching practice.

### **Major Research Findings**

The major research findings found that the factors of; communication, professional development, educator and student motivation and time supported the implementation of TGfU into the teaching practices of the participants. What became increasingly clear was the interwoven and interconnected nature of the factors, it was impossible to isolate one factor from another.

#### **Communication:** “And she would have communicated that to me”

Communication is a crucial factor when considering the implementation of new initiatives. For the purpose of this research study, communication is defined as professional discussion, dialogue, and/or discourse between the study’s participants. The results show that some of the teachers found the communication lines between their colleagues and administration to be efficient, useful and most importantly open and welcoming, while others did not. This lack of communication unfortunately left some with a feeling of isolation and precipitated the need to be self-reliant.

## Participants

Two of the research participants worked together at a small independent elementary school. They share the same office and form the physical education teaching staff at their school, they are each other's primary colleague and logically have the same principal, they also started the Master's program together. As Amanda stated their situation is almost ideal for implementing TGfU, "You know M and I have it pretty ideal here" (Amanda, 02/11/09).

Amanda and Margaret have the opportunity to discuss and talk together in all areas of their teaching day. They amicably discuss equipment and facility choice, as Amanda states:

Yes it is, it's really good, and scheduling facilities, we do the best we can we leave the equipment out, um you know we plan the gymnastic days around, you know one day all the primaries will have the gym equipment out and the next day we'll leave the equipment out for all intermediate, so we have to work together to do that...And she would have communicated that to me (Amanda 08/12/09).

Discussing equipment and facilities is a fundamental part of teaching physical education, the advantage for Margaret and Amanda though is the fact that they can plan the equipment and facilities around their TGfU teaching as Margaret states:

Yeh and so with the scheduling as well, um when we are looking at doing a net/wall games maybe doing rackets, trying to schedule our mutual classes, our classes because we are back to back Amanda and I, um trying to schedule them so we can have the equipment out and we can focus that day on that specific activity, so as far as gym scheduling and equipment management (Margaret, 15/12/09).

Their communication extends to sharing ideas and trying them out as Amanda says:

Well, I think for Margaret and I, it is bouncing ideas off each other and being there um to support each other and laugh when we are doing a very traditional lesson, like don't laugh but we need to get these skills into them, I think we are um are supportive in that, in that way, we certainly don't judge each other, we, and I think having Margaret up on this, like she is probably more familiar than I am, she has been exposed to it for a bit longer, I am almost um challenged by that, you know okay I want to do it as well as she is going to it, and support (Amanda, 08/12/09).



Margaret and Amanda also have the support of their principal who they meet regularly mostly to talk about the every day running of the physical education department. They also meet with her at the beginning of every school to talk about their personal, professional, and technical goals as part of their overall growth plan, which they have to keep in written form. In my discussion with Amanda, she talked about her meeting with Anne at the beginning of this school year.

Yeh, and at that time um I guess it was last September that I started talking about how I would like to look at a different way of teaching PE, and with her work, you know she is working on her doctorate, she has just finished her you know MA I don't know five years ago, so she, she writes a lot of professional articles for journals, so she pretty well, she's comfortable and she is on top of how kids learn, and what's the best kind of learning, and you know we talked about TGfU and critical thinking in the gym, and um, so she was very, very supportive of that (Amanda, 08/12/09).

Whereas Amanda and Margaret have the advantage of an approachable and open principal, William unfortunately had the experience of having very little communication with the administration at his school. As he clearly states, "Um administration, we don't really talk to our administrators here" (William, 04/11/09). Noah was also hesitant to talk to his principal about implementing TGfU and instead preferred to talk to his Vice Principal:

I checked with my vice principal about it and he encouraged it, I didn't mention it to my principal because I don't think his educational philosophy on PE matches to what TGfU offers. So I got permission from my vice principal, I intentionally didn't talk to my principal about it (Noah, 30/10/09).

Similar to William and Noah there is little communication between Ben and his Principal. Ben suggests that if she comes into his class she would be supportive now that he was doing a Master's degree.

She doesn't come and watch classes or anything like that right, you know you have that autonomy, you do anyway if the principal comes in and watches and I guess she is pretty supportive now, she think, I guess as I am doing a M Ed she must think, she thinks that is creditable, um but... (Ben, 10/12/09).

Ben also mentioned that he felt that it was inappropriate to talk to his primary colleague about the way he taught physical education in his classes. He insinuated that practically they did not have the time to talk and that professional autonomy limited any discussion that might occur.

Colleagues um, well there um, you know there, my main colleague she's teaching four blocks at the moment so she is busy, and she got kind of a tough grade 10 class in PE behavioural stuff going on there every time, so um, yeh we haven't had a lot of time to and I don't really expect her to be kind of sitting down and discussing what I am doing (Ben, 10/12/09).

At times throughout his interviews he did suggest that his primary colleague was not disinterested in what he was doing, he instead thought that he found it difficult to articulate his teaching philosophy, especially as it is only recently that he has identified himself as an emergent focused teacher. He acknowledges that it is only since recognizing this that he has been able to start to communicate his position to her:

I think she is eventually, now I know there is something called emergent focus teacher, urh um what, why I am like that, reading it is easier to be kind of confident to explain and then once um you start producing some of the materials that kids can assess themselves on um then I can start sharing stuff and explain it more I think the relationship will feel better, before I wasn't able to explain it to her very well (Ben, 02/11/09).

William on the other hand, is in the advantageous position of having two other members of the physical education department, his primary colleague and one other female teacher, discuss and debate teaching ideas with him. Since implementing parts of TGfU into several of his classes, William has also been approached by other members of his department who have shown an interest in what he is doing:

They just said what are you doing, and I said well, we are playing this game urh and here is why we are playing this game, to teach them to move on the court because they are too still and a couple of them said oh that's kind neat they looked like they were having fun, whether they come back during their unit and say what's that game again I'd want to give it a try, hopefully they will, but they seemed at least keen on the idea just from watching from the small gym, and seeing what was going on, because it is something different that in a badminton unit that they hadn't seen, so (William, 04/11/09).

When I asked if it had created any discussion in the physical education office, he

replied that it had:

Yeh, with a few individuals, not everyone wants to change, there are a lot that are happy with the way things are going on in their class and they are not necessarily wanting to do that, but I think they are open to new ideas for sure, yeh (William, 04/11/09).

There seems to be some discrepancy in the level of communication that the teachers experience. As described above, Margaret and Amanda not only have each other to bounce ideas off, but also have a very approachable Principal who is herself familiar with the recent trends in education theory and curriculum development. In comparison to the other participants, their situation does seem ideal. There also seemed to be a strong sense of teacher autonomy, Ben spoke of it; that he really did not expect to discuss TGfU or any other teaching approach with his primary colleague. This gives the impression that there are restrictions to how much teachers can divulge about their teaching ideas.

### Primary Colleagues

As described above two of the participants, Margaret and Amanda, work together, share facilities, equipment, office space, and a great deal of intellectual dialogue, that is, talking, debating and refining ideas and new initiatives - especially TGfU. In view that significant points regarding Amanda's and Margaret's unique position have been commented on earlier in this section, I will concentrate predominantly on comments made by the other participant's primary colleagues. For Noah and Ben communicating with their primary colleagues is limited by the fact that they teach other subjects and are therefore located in different parts of the school, this unfortunately limits the time available for professional discussion. William has a more positive situation; he shares an office with all of the physical educators, resulting in the forging of a strong professional relationship with two other full-time physical educators.

Martin, William's primary colleague has been teaching at the school for twenty years, and has seen many changes. Working in the public school system that has felt the effects of the funding cuts caused by the recent economic

climate, he is not particularly positive about the way his school has been run and how the school philosophy incorporates physical education. Martin agrees with William in regards to how much communication transpires between administration and the physical education department and the physical educators. He states that, "I must say that this is my 21<sup>st</sup> year here, I rarely ever see the principal, so unless I say hi in the hallway I might not ever see her" (Martin, 07/12/09). He continues by saying that at department head meetings physical education is never talked about:

Um it is never talked about, in department head meetings in the last six years PE is never talked about, well it was talked about last year, when they were cutting department heads, everyone had a 1.0 department head, and then in June last year they announced the PE department head was going to be cut down to 0.5 (Martin, 07/12/09).

Martin continues suggesting that the little contact between administration and the physical educators suggests the administration has very little insight into what actual occurs in the physical education department. He states, "There is no accountability, um if you do something as a PE department you are on your own, if you don't do something as a PE department you are on your own, no body checks" (Martin, 07/12/09). Martin also asserted that it is the same for the other departments in the school, "So now all the departments are pretty strong but they all kind of work independently" (07/12/09). For William, his physical education colleagues play a significant role when he needs to discuss ideas and new initiatives, such as TGfU. Martin confirms that William, himself and one other full-time female physical educator rely heavily on each other in terms of sharing ideas and discussing issues that arise in their teaching:

We bounce a lot of ideas off each other, umm and a lot of it is he has his idea and we talk about the pros and cons of it and that may go back and forth for two or three weeks, until we kind of refine the idea into something that will work. And it works the same way if I have ideas, usually it works with urh me here, Ms. X there and K there and the three of us kind of (Martin, 07/12/09).

The relationship established between William, Martin and their third colleague has enabled them to work closely together on issues such as curriculum development, teaching practices and new initiatives. For example, Martin

describes how the three of them worked closely together to institute the new Integrated Resource Package (IRP) in their teaching practice.

During the interview Martin more than once discussed how it was up to the individual teacher to implement new initiatives without the support of administration or other members of the teaching body, which leaves a feeling of isolation, “If you want to do something you just do it” (Martin, 07/12/09). He reiterates this point again in the interview, “So in terms of new initiatives, no body really asks the principal, they just do it” (Martin, 07/12/09). There was a tone of frustration in his voice.

For Noah the situation is quite different, he only has one other colleague Kathryn, who teaches just two physical education classes, and is otherwise located in another part of the school. They therefore have limited time together to discuss new ideas and initiatives. Kathryn though is very open to having more dialogue with Noah:

But me and him haven't really talked specifics, which would be good actually I wouldn't mind doing that, because me and him sometimes can get the class together, like we have the same block so we go into the gym and try something together as a group, but we haven't done that yet (Kathryn, 16/12/09).

Kathryn who has recently graduated from the UBC Education program is familiar with the TGfU concepts as well as the benefits that a TGfU focused teacher can create for both themselves and their students. She suggests that when she and Noah eventually have time to discuss their ideas, that she has would definitely be interested in implementing TGfU into the school's physical education classes:

Yeh, no and definitely, yeh Noah and I were really, are really, um we are pretty much the same, like we are open to, if he has a new idea I'll use it, if I have cool game he'll use it, and tell each other 'oh yeh, it went well, thanks for the new idea,' so I know with him we would definitely work well together, um implementing you know a new programme or trying to implement maybe TGfU with the grade 8s (Kathryn, 16/12/09).

Finding the time to talk to Noah is a big issue, they might in passing share ideas for warm-up games or parts of their classes but struggle to find the time to sit down and discuss in depth the implementation of TGfU. She although seems

confident that if they did find the time she would be supportive of his implementation.

Kathryn suggested that the administration and principal are approachable and open to discussing the implementation of new initiatives:

And then from our principal he's pretty open minded too, as long as I communicate to him and, and give you know give him the pros and cons, like why, like the summary of what I want to do and why it is important for the PE classes (Kathryn, 16/12/09).

This suggests that this is only possible if her initiatives can be justified within the school philosophy.

### Principals

For the principals, communicating with the teachers was very important. The majority of them talked about sharing their visions for the school with the teaching staff. There was strong emphasis placed on being available and open to those teachers who wanted to discuss implementation of new initiatives such as TGfU.

Joanna talked at some length about sharing her vision with the teachers at the school:

So basically I share my philosophy, my vision with the staff, and then the staff come to me with their ideas, and they maybe looking at, okay I have this idea about this program that I want to start, or um this special thing that I want to do in my classes, and I think it fits into our school framework in this area, and they will come and talk to me about and then we will discuss the idea and we may modify their idea some what (Joanna, 17/12/09).

Anne echoes this by saying that, she talks to her teachers about innovation and creativity and encourages teacher's best practice. She states that she does this by setting the tone for dialogue and opportunity for growth, "and it is the power of dialogue, it's the power of discourse" (Anne, 07/12/09). Nigel also talked about supporting Noah through intellectual means as long as it is situated within the philosophical framework of the school:

So trying to support him as we would say there intellectually around what his goals and outcomes are going to look like for his students here as well, and then I would encourage him to go for it, you know and to try it

and to be reflective on it" (Nigel, 07/03/10).

Robert continues the discussion by, suggesting that offering advice to teachers is a way of supporting them in their attempts to implement new initiatives. He suggests, "Yeh, it would probably be, probably in the reality is the most direct role that someone like me would have, is try and understand what they are doing and provide support and advice if you can" (Robert, 07/04/10).

Anne also talked about the importance of communicating ideas within the rest of the school. She suggested that in her school physical education is just as important as other subject areas. She emphasized that by not compartmentalizing departments it created the opportunity for professional discourse and a forum to discuss similar teaching concepts within all subject areas. She states:

But you know with PE we really make sure that also they are part of the discourse in the whole school, um you know we try not to compartmentalize programs, so we're saying that you know we want to make sure the math teacher has the opportunity to talk to the PE teacher because some of these contextual underpinnings are the same, around child development, the whole child, critical thinking um all of those (Anne, 07/12/09).

One interesting point that Robert made was the fact that teachers can implement new ideas on their own but to do so might take a lot of personal strength:

Um, now having said that it doesn't mean you can not do that in isolation...Because you can, but it probably is a little more difficult emotionally, to proceed with something that other people are looking at, like what is this bizarre thing that you are doing, now you can do it if you have broad shoulders and you really feel that you are doing the right thing, but it is much better if the people around you have an understanding, because they can be supportive of what you are doing, so I think that is really important, so that, that's within the department (Robert, 07/04/10).

As Robert suggests here it is more advantageous for the teacher to have the support of their primary colleagues when implementing TGfU. This is an important point to remember in relation to William's situation. As you may remember William has strong colleague support but as he and Martin so clearly

stated there was very little communication between themselves and the administration.

As has been highlighted in this section, communication is a vital factor for sharing ideas and creating professional dialogue. Even though within the teaching profession there is a strong argument for professional autonomy, it seems though that when implementing new initiatives teacher autonomy can create an environment of isolated rather than collective endeavour.

**Table 10: Communication Summary**

	<b>Primary Colleague</b>	<b>Principal</b>
Margaret	Amanda - Clear and open communication, sharing of professional dialogue, highly supportive	Anne - Clear and open communication, sharing of professional dialogue, approachable, open and supportive
Amanda	Margaret - Clear and open communication, sharing of professional dialogue, highly supportive	Anne - Clear and open communication, sharing of professional dialogue, approachable, open and supportive
Noah	Kathryn - Difficult to find the time, limited professional dialogue, but both willing to improve situation	Nigel – educator had to justify new initiatives that meet with vision for the school. Noah preferred to talk to VP rather than principal, differing of perceived philosophical position by Noah. Principal supportive and open to discussion
William	Martin - Clear and open communication, sharing of professional dialogue, highly supportive	Robert – William had no communication. VP appeared supportive if needed
Ben	N/A - Little communication, limited by time and perceived professional autonomy	Joanna - educator had to justify new initiatives that meet with vision for the school. Limited communication, perceived professional autonomy. Principal very supportive if approached with ideas etc.

The summary table above highlights the particular lines of communication for each participant. As shown above, both Amanda and Margaret had clear and open communication with each other and their principal. While Noah and Ben have limited communication with their primary colleagues, but both principals



were supportive if the educator's initiatives meet with their vision for the school. In William's case, he did not communicate with his principal at any level, but rather discussed his ideas with his primary colleague.

**Professional Development:** "it can take all ...sorts of configurations"

Throughout the interviews the teachers, primary colleagues and principals discussed professional development as an essential factor for the implementation of new initiatives, such as TGfU.

**Participants**

Unlike their primary colleagues and principals, the teachers were never asked directly about professional development, therefore the comments highlighted below evolved from their interview discussions.

Margaret has had the most experience teaching TGfU. She attended a Provincial Pro-D TGfU workshop three years ago and since then tries to attend as many TGfU focused conferences and workshops as possible. She also attends the University of British Columbia PETE association workshops. Her initial introduction to tactical games teaching was she admits nine years ago at a BC School sports conference. As she states:

Well it is um, I mean it is interesting I have all these years of teaching and um just feeling that yes, I could change and it gives me such a boost to start doing something differently, I mean I have always taught a wide range of activities um with the kids um, and I have always been generally involved with it, I think um certainly when I took a session with GW about ten years ago at the BC School Sports conference, I keep going back to that just the generic aspect of games teaching, I mean that has been the most impactful thing for me (Margaret, 02/11/09).

Amanda in the last few years attends professional conferences and workshops that have offered TGfU content. She talked about the influence these have had on her teaching:

Well I think um, with pro-d um going to Joy Butler's at um Douglas college last year when we did the inventing games one, and then um the sessions I took in Banff I made sure they were all in the TGfU fashion we were going to do cricket or net-wall games or something, um I think that was the biggest thing is seeing it, seeing it at pro-d would be the biggest influence (Amanda, 02/11/09).

Ben is familiar with TGfU but has not had as many opportunities to attend professional development conferences as Margaret and Amanda. Noah had heard about TGfU before the start of the Master's program but had not attended any professional development workshops, while William had not heard of TGfU before starting the Master's program.

William's biggest concern when teaching TGfU was feeling comfortable and knowledgeable about the different concepts. He suggested that only when he felt confident in this knowledge would he think about expanding TGfU into all areas of his teaching. He talked about wanting more out of the Master's program:

I want more out of the course of what an entire unit of TGfU looks like, and I don't think we have gotten that yet, and I still want that, I have a few ideas of what I can do for certain games, but I don't know what a particular unit looks like for, or do I have enough games in my repertoire to do for every sport that we are doing (William, 04/11/09).

Even though William did expand his teaching of TGfU into other classes, it was only within a games category that was comfortable teaching. For example, he expanded his TGfU teaching in other classes by teaching the same unit over again. This quite clearly states that he feels inadequate with his knowledge base, and feels he needs more knowledge, experience and confidence in what and how to teach TGfU. This is not surprising; in most subject areas, teachers are supplied with unit plans, textbooks, and other resources to supplement the lesson content. William suggests he would feel more confident if there were more resources available to him and he had more experience teaching TGfU.

This indicates that his Master's program is key to his development of TGfU. Ben also mentioned how he used experiences from the summer institute in his teaching:

You know I think for me it is more like I think I know teaching the volleyball I taught it using Richard Light's way and um but then tried to measure enjoyment at the same time with the strategies, see if the strategies they came up with, it was a mixture of Richard Light's way but then it was like Joy Butler's go away come back with a strategy for improvement and involvement, then it was like measuring enjoyment along side that, so um yeh that was totally from the summer institute I had never done that before (Ben, 10/12/09).

Here he adapted his teaching method based on a practical workshop taught by Drs. Light and Butler during the summer institute.

When the summer institute, viewed as an intervention of the participants' teaching philosophy, it is logical for the participants to make adaptations into their own teaching. Unfortunately, beyond this there is limited exposure to TGfU professional development for physical educators. Margaret, a strong advocate for developing TGfU professional development workshops suggested a more structured approach:

I just would like to start seeing steps at the provincial Pro-d level, I mean one could start small with the different school districts, but I think if there was something developed that could be really urh advertised to various school districts and maybe pro-d day because it could end up being really big, um especially if it was pushed by the school districts, I mean you know we may have to break it down into smaller ones, but um maybe we start with trying to next Pro-d day offer another options for people (Margaret, 02/11/09).

The fact that some of the participants discussed professional development makes it very apparent that it is an important factor that helps expand their TGfU knowledge and experience.

### Primary Colleagues

All the primary colleagues thought professional development was important for implementing TGfU. Although there was a differing of opinion in what form that it should take. While on-going workshops were more favourably, one-day workshops came under scrutiny.

Margaret who in her previous interview described herself as an advocate for professional development reiterates her previous points. The administration strongly encourages and supports her professional growth, but there is an unfortunate lack of TGfU focused Pro-D day workshops and conferences. She states:

Um, um there is certainly not enough, there aren't enough opportunities out there to keep pretty tied to it, I think that is part of the problem, certainly having a pro-d day that was complete dedicated to it would facilitate it (Margaret, 15/12/09).

She continues along these lines when she discusses what is more plausible as a solution for the lack of TGfU workshops. She suggests that to sustain a teacher's interest the regulated professional days, usually a minimum of three days per year should be dedicated to TGfU:

I mean if it was just once a year going to one conference I don't think necessarily that would sustain it, I mean certain um, um you know it would be more useful to have a, even year planned out with maybe three, three days with different focuses with the TGfU I think something, um and some sort of network for um sharing ideas (Margaret, 15/12/09).

Amanda talked about how much she enjoyed the 2009 national PHE conference in Banff and how that helps to sustain a teachers impetus to implement TGfU:

Yeh and um but the conference at Banff the Banff was wonderful, you know I purposely sort out um sessions that were taught using a TGfU methodology and I think a lot of the sessions mentioned that in the handbook, so I did I liked that, in sustaining a teacher's commitment to new initiatives, yes I um (Amanda, 08/12/09).

When asked whether this was enough, she replied that there was a definite need for more. She talked about trying to attend the UBC PETE Association workshops, but admitted that as a busy mother and coach she found it difficult to find the time. This connects with the issue of time, discussed later in this thesis. Many of the participants as physical educators volunteer much of their free time to coaching, which takes away from other aspects of their professional development.

Kathryn talked about the issue of one-day pro-D workshops. She felt that they were not as effective as on-going subject related professional development:

It is not like a master's where you go every Saturday, you know you are learning and you have to do a project on it, it is just you go in, for you know any kind of event or session, or you know you go for it for three hours you listen, you write some notes, you come back and read you notes oh urh what, what was that about (Kathryn, 16/12/09).

She also talked about the need to have more professional days, suggesting that four times a year was not enough:

So that I'd, I'd say only having pro-d only four times a year, I don't think it is enough like, you need to have more of urh, maybe like each year teachers should, they should have programmes for teachers and need to,

um sign up for it the whole year, and go to it once a month, or maybe every two weeks, continuously so that you implement it (Kathryn, 16/12/09).

When suggested time could be a factor for some teachers, she responded with the suggestion of offering workshops similar to ones organized at her school during the lunch hour. She explained that these monthly lunchtime sessions were established by her principal to discuss teaching issues. Martin's focus was slightly different from the other primary colleagues. He did agree that professional development was fundamental in sustaining a teacher's commitment to new initiatives but his focus went beyond the individual teacher and even the school, as he explained he was frustrated at the lack of vision and the lack of a physical education coordinator in his school district:

Yes, but not just for individual teachers but for the whole department and for all the departments in Z. Z does not have a vision for PE in the district, so all the, all the departments are just on their own to do their own thing, what is XY doing in PE, well they are only 2 kilometres over that way I haven't got a clue what they are doing (Martin, 07/12/09).

Martin looks to the Surrey school district as a model for physical education vision. He discussed at length their commitment to professional development and suggests their district physical education coordinator played a large role:

GY he is phenomenal, I have been to a couple of his workshops, not only does he put together packages that get sent out to all the schools out there in Surrey, he also holds professional development days where he pulls in all the PE teachers and puts on workshops for them, he brings in people, he even provides certification workshops (Martin, 07/12/09).

Similar to his primary colleague William, the underlying theme here is the need for support, by not only the workshops, resources, and certification but also leadership and vision that seems to be lacking in his school and district.

## Principals

All the principals strongly agreed that professional development or professional growth was a fundamental aspect for implementing new ideas and initiatives. Similar to the primary colleagues there were differing of opinions on what form this should take. Nigel, in particular thought one-day pro-d workshops

were not as productive as other types of professional development.

As Anne states, she believes that all teachers should be involved in some sort of professional growth, “So you know its urh it is a really fundamental part of this school that everyone is involved in some kind of professional growth” (Anne, 07/12/09). Joanna echoes this when in her comment:

So you know generally um I do believe it is important to have ongoing professional development, it urh and it urh and part of that is also our pro-D days, our collaboration days, because you know teachers are life long learners and certainly when I look at how teaching and education has changed even in the last 10 years, it is a very complex job certainly, certainly with all the research that has gone on over actually, I think over the last 10 years (Joanna, 17/12/09).

The idea of keeping up to date with the theoretical trends in education was also emphasized by Anne, she suggests that:

We also make sure that um they have opportunities for professional growth and development with outside people, you know it is really important that they understand the trends that are going on in education and teaching and learning and urh and, and develop some of the concepts around that and how that would be implemented in our school (Anne, 07/12/09).

The term life long learner used by Joanna above is echoed by Anne who states that she is a strong advocate of professional growth, which she believes can come in all sorts of configurations:

Well, you know um, you are kind of talking to the converted here, for me um there is nothing like professional growth and you know it can take all, it can take all different um, um sorts of configurations, it is you know taking courses, conferences, urh reading, um dialogue groups, um visiting other schools, you know if we are going to having lifelong growth in students, we have to have life long growth in teachers, and um you know teachers um thrive also and they are inspired when um when they are learning new things just like students are (Anne, 07/12/09).

The idea that professional growth comes in all sorts of configurations is discussed by Nigel, who believes that one-day workshops are not as effective as other sorts of professional development. When I asked him about one-off workshops his response was, “my experience is that with most of those things they are not effective, um you know teachers lose interest in urh taking what they should out of them” (Nigel, 10/12/09). Instead, he suggested that what are more

effective, and especially in Noah's situation where he is the only full-time Physical educator, is to link with other teachers working on projects together:

So I think actually what's much more powerful is when Noah or any other teacher is linked with colleagues at other schools who are actually doing things and they are actually working on projects together, um that are much more connected to what they are doing in the classroom, um I don't find the big days, you get inspired then you go away (Nigel, 0/12/09).

This idea is echoed by Robert, who suggests that for new initiatives to be implemented not only is professional development through workshops needed but colleague's feed-back through scheduled and structured meetings are also necessary. As he argued, "But something like this would probably it would, the need would be served better with on-going professional development, on-going meetings with other teachers for feedback and so on" (Robert, 07/04/10).

All the principals discussed the idea of creating learning communities for the participants with their colleagues or with teachers from other schools who are interested in the same curriculum development and implementation.

Professional development quite clearly is a factor that all the participants of this research study, teachers, primary colleagues, and principals were passionate about and felt was genuinely a vital part of developing teaching skills to enhance their practice.

**Table 11: Professional Development Summary**

	<b>Participant</b>	<b>Primary Colleague</b>	<b>Principal</b>
Margaret	Promotes instituted provincial wide TGfU professional development	Amanda - More opportunity for TGfU workshops, but restricted by lack of time	Anne - Promotes life-long learning through all guises of professional development
Amanda	More opportunity for TGfU workshops, but restricted by lack of time	Margaret - Promotes instituted provincial wide TGfU professional development	Anne - Promotes life-long learning through all guises of professional development
Noah	Did not discuss Pro-D	Kathryn – Looking for more structured on-going, long term Pro-D	Nigel - Not a fan of one-day workshops, promotes in/out of school peer dialogue, & professional learning groups
William	Feel more confident with more TGfU teaching experience and resources, therefore needs more TGfU workshops	Martin - Need for expanded professional training throughout district, concerned with absence of physical education coordinator	Robert - Promotes pro-D, in the process of establishing professional dialogue groups in his school
Ben	Integrated activities from the summer institute into his teaching	N/A	Joanna – fully promotes lifelong learning for teachers learning through Pro-D

The professional development summary table highlights several themes that are emerging within the research findings. (1) The idea that there is not a one-size fits all remedy; rather many forms of professional development are promoted. (2) The establishment of professional dialogue groups; three of the four principals were either promoting or conducting groups by providing time in the timetable or other times of the school day and (3) the idea that life-long learning is on going and fundamental for sustaining educators' implementation of new initiatives.

### **Teacher and Student Motivation: “seeing these rewards is motivational”**

The material in this section ultimately pertains to the participants and is therefore drawn mainly from their interview discussions, please also note that where applicable principals and primary colleagues' interview comments have supplemented their material.



Motivation was a crucial factor that supported the participant's implementation of TGfU. This motivation was generated from the positive response of their students to the TGfU teaching method. Even though the majority of participants were at the initial stages of implementing TGfU into their classes, the results were favourable; they talked about the students' increased enjoyment, participation, motivation, and engagement level. There has been much written about how the TGfU teaching method benefits student's constructive engagement (Light 2002, Butler 2006, Mitchell & Oslin 2006). Therefore, this section will discuss how that engagement affects the participants' motivation to encourage further implementation of TGfU into their teaching. Within this discussion, the participants identified two areas that might affect their decision to further implement TGfU into certain classes; first, the student's prior experience of physical education, and secondly and ultimately connected to this, is the need for elementary physical education specialists. As before the factors that encourage implementation are interrelated and not easily separated, as each factor affects the other.

### Participants

A considerable part of both interviews concentrated on the participants' response to their student's reaction to the TGfU teaching method. This success motivated the participants to expand TGfU into other classes and more games categories. Even though all the participants perceived (levels were not measured) an increase in engagement, motivation, activity and enjoyment levels through the TGfU teaching concepts, for some participants the success of each class was dependent on the student composition and their previous exposure to physical education. Some of the participants talked about introducing TGfU only into classes where the students to some degree trusted and felt comfortable with each other. Therefore, this section will partly concentrate on how the student's response to TGfU motivated the participants, but will also discuss class composition, student's previous exposure to physical education and elementary physical education specialists.

(a). Engagement Levels

Margaret, who out of all the participants has the most experience with TGfU, is now seeing the results of her TGfU teaching with her more senior elementary students. As she suggests they are more engaged and more skilled athletes:

I mean these are really, I, I have to say they are very skilled athletes and the fact that there is such involvement by all of them, I mean there are still a couple of slugs out there, but they are engaged and they are playing, you know it would be interesting to compare our grade 7s with other grade 7s that haven't had any of this sort kind of training (Margaret, 02/11/09).

She further suggests that this success rate is dependent on her primary colleague Amanda. Between them, the two teachers alternate grades each year. Margaret takes the odd numbered grades, while Amanda takes the even numbered grades. As Margaret states:

But you know you see them out there I have just started ball games unit with the grade 7s, and having had done this through grade 5 and I know Amanda did the same thing in grade 6, I mean these kids know where to pass, the ball movement, the positional movement, it is just fabulous (Margaret, 02/11/09).

You can sense from this comment that Margaret is not only proud of her students' abilities, but also extremely motivated to continue using the TGfU method in her classes. She clearly articulates the impact she thinks TGfU has had on her teaching:

Absolutely and it certainly impacts me as a teacher seeing these rewards is motivational for me, seeing the kids react and how they are engaged and ur I think then that as you say loops back to them, because I personally tend to bring a lot of energy most of the time a lot of energy and enthusiasm because for me it is just such a great experience and um certainly kids have their days when they sort of drag themselves in a little bit but I think it just recycles itself for sure (Margaret, 28/09/09).

Ben echoes Margaret's comments, and suggests that by providing an arena for dialogue through questioning - which he is extremely proactive in incorporating into his classes - that the students take more ownership over what is happening in their class and are more actively involved. He suggests:

That's the theory behind it all, and the, and the biggest rewards of teaching using the TGf method from, their, their perspective I can kind of see that, as a teacher you know I feel that its more enjoyable for me because I see the kids being more involved (Ben, 03/10/09).

Ben uses the example of a warm-up game created by his students. The class created a type of treasure hunt game in what Ben calls free-play warm-up. In addition, he suggests students were positively motivated when given the freedom to create and establish their own roles and rules:

So right then you discuss well was that working, was that good, and they are all like yes, 100 %, that was brilliant, then well okay what issues do I have with that as a PE teacher, right and then they have to try and emphasizes with me (Ben, 10/12/09).

Amanda also talked about giving her students a voice and putting their suggestions into action. She highlights this point when she talks about examples of questions she asks her students:

It is, and just giving the kids their own voice, letting them articulate and um you know I don't go oh who didn't get many passes, and why didn't you get passes, it was like who got a lot passes and why did you get passes, and how many of you, you know had a, had a team mate who ran into space for you or you know make it positive, and urh let them share it, you know everyone on the team were so good yesterday, well you guys each of you tell me what you did well, tells us so that we can do it in our game next time that's something that I didn't do a lot of before (Amanda, 02/11/09).

William, similar to Margaret, Ben, and Amanda found his students responded well to his questioning and discussion, although initially it was the modified games that motivated and engaged his students. William stated that his students are more motivated, "it has been a huge increase in their participation level, so that's on top of engagement and motivation that's excellent" (William, 04/11/09). In the first interview, he had just implemented TGfU into a volleyball unit. William spoke about a parent/teacher evening shortly afterwards:

[A] parent said that urh my daughter so and so is not going to be your best athlete, she has never really been that great at sport but she came home and was so excited because she finally got the volleyball over the net and that was first time in all the time, in all the years she has played through elementary school that she has had any success at all and she,

she likes coming to PE, she looks forward to it and she said she is not going to be your best but she said that's nice, so I think that's what you are looking for (William, 01/10/09).

He suggests that student's positive reaction motivated him to expand TGfU into some of his other classes:

Student reaction um, probably was the reason that I tried it in one of my grade 8 girl's classes, the reason I kept doing it in the next class and used it in my boys as well is because the kids liked the games and were really active, so I thought lets try this with all the classes why just use it with one (William, 04/11/09).

For Noah, he initially found that his students had a mixed reaction to his change in teaching. He talked about students approaching him to ask what he was doing differently. Noah explained that he wanted the students to be the focus and for him to take a back seat. Their response was that "they were like oh, and a few of them were I don't know touched or happy with that oh, like that's great Mr. N giving us more control and letting us do it our way" (Noah, 30/09/09). While other students and even some parents approached him to say that they liked his discipline and passion, "you know trying to keep everybody happy, I really like the reward of letting them being the main focus and so basically I am talking less in class, which I used to talk so much" (Noah 30/09/09).

The aspect of TGfU that surprised Noah the most was the questioning and discussion. He discussed having students that did not initially talk very much, but now engaged in the discussion, was a motivating factor for him:

So, I guess getting kids who never talk here or there to talk was a big reward for me that I originally didn't see it coming, I do still see them in their extra-curricular sports or after school utilising some of the strategies talked about, so I still believe that as a huge success (Noah, 30/10/09).

All these examples really illustrate the point that for the participants to implement TGfU into their teaching, their students' increased engagement, participation, and enjoyment was a crucial motivational factor for them.

(b). Class composition and previous student experiences in physical education

Several times throughout the participant's expressed concern about the issue of class composition and students' previous physical education experience.

This was especially true for the secondary school teachers. They found that they were more comfortable implementing TGfU into certain classes rather than others. This clearly relates to the context of whom and where they are teaching.

As Ben discussed in his interviews the issue of size and maturity was a problem for his grade 8 class:

They are a problem because they're, not a problem but different this group from the last two grade 8s, the last two grades 8s were a smaller intake, we've got bigger classes, we've 29 and 30 which is big for our school and urh the class I have in PE is urh you know is hard to manage then it is than in all the classrooms with the all the subjects, they are a bit immature yeh (Ben, 10/12/09).

He suggests that these students do not have the skills or maturity level that is needed for TGfU, as he states, "they need to get used to making decisions and choices" (Ben, 03/10/09). He suggests that his grade 10 class is just starting to learn those skills.

Noah also had trouble with his grade 8 class. He discussed how he questioned the quality of physical education at the elementary feeder schools. He suggested the classes were outdated and repetitive where the "roll out the ball" was the norm (Noah, 03/10/09). Noah also described how he had to "train" the students to set up and take down equipment, listen to direction and be respectful when others were talking. As he states, "knowing that I don't think, ... TGfU would help with that would work for those kids, I think by at least grade 9 and even that because they all want to be cool by that time, I am thinking that I won't be doing it with all my classes" (Noah, 03/10/09).

Like Noah, Ben suggested that the issue for the grade 8 classes was that the class needed more structure and that some students respond better than others might. As he suggests the idea of creating a less structured class that he believes is more TGfU focused is challenging to introduce to grade 8 students:

Some of them might not, might not enjoy a less structured method actually, some kids I believe probably really like structure and whether this [TGfU] works at grade 8 as opposed to grade 10, and how you unroll it over grade you know, how you deliver it over grade 8, 9 and 10 I think that needs to be looked at as well because grade 8 they probably need more structure (Ben, 03/10/09).

Even though both were reluctant to implement TGfU into their grade 8 classes, they were more successful with their higher grades. As Ben suggest his grade 9 and 10 classes were more comfortable with each other and he had formed an especially strong relationship with his grade 10 leadership class, he stated that they were, “Very confident in, in each other’s company, you know it kind of pretty strong group, so I think the context allows it, right?” (03/10/09). He also states that his grade 9 girls class work well together and that supported his implementation of TGfU, “...um girls in grade 9 girls, and they’re all um pretty athletic and pretty sociable and everything so, that, I have been really helped by the groups” (Ben 10/12/09).

For William the situation was reversed he successfully implemented TGfU into his grade 8 class first, before expanding it into his other classes. He discussed how he was trying to set an environment of cooperation with his grade 8 class:

I had a discussion with some of the kids who play [volleyball] about helping some of the other kids in the class when they have a chance to and if we are doing those activities, and some of them have been pretty good and taken that role on but they are grade 8, it takes a little while (William, 01/10/09).

He did note though, that many of his grade 8 students were unmotivated and apprehensive about physical education, “many of our grade 8 classes come in unmotivated, they come in scared, they don’t want to do it” (William 01/10/09). This relates back to the issue of the students’ previous experiences. As Noah noted above, his expectations for his physical education classes were quite different from what his grade 8 believed it to be. Even Amanda mentioned that at her school, where they accept new students in grade 4, their lack of skill and knowledge surprised her:

I mean it is interesting when we have new girls who come in grade four, because we increase the class size in grade four, and we have kids who come in with such little experience in just the variety of the games we play, or the variety of experience that we offer, they’re overwhelmed by I guess the expectations as well of what kids can do at grade four when they have really had no um training, or it has been hit and miss just throw the ball out, or you know is the classroom teacher taking PE, or um it is a specialist but you only have it once or twice a week, so um certainly the school supports PE as being critical in um (Amanda 08/12/09).

Ben discussed this point above. He suggested that for TGfU to be successful students needed, “to get used to making decisions and choices” (Ben, 30/10/09). This implies that the sooner the students are comfortable making decisions and choices the more likely TGfU is to succeed in physical education. This hints at the fact that rather than a question of age and maturity, it is more a matter of whether the students have previously been taught critical thinking skills, which can be taught from a very young age through the use of questioning, problem solving, and group discussions.

(c). Elementary physical education specialist

It might be suggested then, as many of the participants alluded to in their interviews, that what supports their implementation are students who have been exposed to quality daily physical education or even better, TGfU, at an elementary level. After being asked if she feels as though she is in a unique position as a full-time elementary physical education specialist Margaret responded by stating:

Well, I mean there are going to be factors, certainly having the regular physical education, and having the intramurals program, having you know an excellent participation level in the co-curricular program and having you know teachers like Amanda and I, having specialized teachers (Margaret, 02/11/10).

William echoes this in relation to implementation of TGfU at the elementary level, as he quite clearly states:

I think just more research needs to be done that shows some of the benefits to the kids, and if the research is out there and says this is good for the kids, this is good for our kids physical activity level then that's what needs to be done at that level to be at least pushed in that direction, if the learning make sense, if you know if it makes sense for the kids why wouldn't you do it kind of thing ... Yeh, well I think elementary, every elementary school should have a full time PE instructor there, urh who are either teaching the phys ed classes or supporting the classroom teachers with lessons to help them because they are so uncomfortable, many that I've talked to are so uncomfortable being in the gym and that aspect of teaching PE, it is something that they don't enjoy (William, 04/11/09).

He continues this line of thought and questions whether generalized elementary

teachers have the knowledge to implement TGfU:

I question whether or not, um, generalized elementary teachers are going to be comfortable implementing it...Because they do have to let go of control, they do have to have a little bit of knowledge in terms of sports to be able to ask the right questions and get the right responses, um I think process wise they will be fine but in terms of knowledge base some of them so uncomfortable in the gym (William, 04/11/09).

The participants suggest that teaching students who have experienced some quality physical education might alleviate some of the issues found in the older grade school years and accelerate the successes that they have experienced teaching TGfU thus far. They do suggest that some generalized elementary teachers may not have the foundation to plan quality PE lessons, and because of this, they are doubtful that TGfU will be implemented at the elementary level.

#### Primary Colleagues

The primary colleagues discussed the need to have elementary physical education specialists and for Kathryn it was quite clear. She suggests that for TGfU to be successful, having an elementary physical education specialist is key:

But anyways they should, we're saying, we were talking about how they should, so that you know if TGfU is going to be successful, it's better to start from the feeder schools with the PE specialist and then they work with the high school teachers, so it, that they are all in unison so the kids will be used to that kind of, kind of urh activity (Kathryn, 16/12/09).

She re-emphasizes this point when she talks about discussing TGfU with a colleague from another school district. There was agreement between the two colleagues that it was hard to implement TGfU at the secondary level when students had been taught in the traditional manner:

I saw her yesterday, and she was talking about TGfU, and she like yeh, it's hard, she said it's hard in her classes right now to try and do it because they are used to the other way, and then I was saying yeh it would be better if it was in the feeder schools, the elementary schools start first, and they were talking about how they need more PE specialists (Kathryn, 16/12/09).

While Kathryn is very familiar with the TGfU teaching method and



therefore can relate to the perceived challenges, Martin, through the supervision of a pre-service teacher, only recently became familiar with TGfU. Therefore, while unable to talk directly to the challenges that teachers face when implementing TGfU, he could still empathize with the issue of elementary physical education specialists. Talking from both personal and professional experience as a father and a teacher, his commentary will be helpful for this discussion. He has two daughters that attended the local elementary school, and states that both daughters experienced prolonged periods with little or no physical education. He further suggested that the lack of a district physical education coordinator has compounded the situation:

Well I went to the assistant superintendent about five years ago and said we need to bring back the PE coordinator and we need to urh, I said, I can tell there are kids coming from the elementary school, and both my, XZ elementary school (XZ ES) is just over here a little bit, and the kids from XZ ES come here, and now my daughter is in grade 8 here, I can see, I know what they are getting in PE at XZ ES, because my daughter was there for 8 years, my other daughter has been there for six years and I know they had long stretches of like 2 or 3, 4 years when they really didn't get PE, but if there was a PE coordinator who was helping them out, giving them ideas how to do things it could have been very good (Martin, 07/12/09).

Martin quite clearly speaks to the issues raised above by the participants. Firstly, that they perceive elementary students to be transitioning into secondary schools with little physical education skill and knowledge which has been exacerbated by the lack of specialists at elementary level. Secondly, that if physical education specialists were teaching TGfU at elementary level, then as Kathryn insinuated, the implementation of TGfU would be more in unison and successful at all levels. It is unfortunate, as Martin states that when he did talk to his district assistant supervisor, that even with the recent initiatives introduced by the Healthy Schools Act and the daily quality physical education, initiatives where a physical education coordinator could play a key role, there was no funding for a coordinator, let alone elementary physical education specialists:

I know but when I talked to the assistant superintendant we need to bring back the PE coordinator at least to help out with the elementary schools, coordinate the senior schools um he said yeh have been talking about because there is a healthy schools act now and somebody would need to

help urh coordinate with the healthy schools act with PE and the daily physical education but then it was like oh more cuts it is not going to happen (Martin, 07/12/09).

Throughout his interview, Martin came back to the same point - that there needs to be more support for physical education and educators.

## Principals

Not only did the participants discuss the need for elementary physical education specialists, but this was also confirmed by the principals and primary colleagues. Two of the principals touched on the subject briefly. Anne stated that she believed that physical education specialists are an important part of the teaching body, “we look for specialist in PE, so it’s important” (Anne, 07/12/09). Whereas, Robert, when asked if the lack of elementary physical education specialists affected the student’s development of physical education skills and knowledge entering secondary school, responded by suggesting that it was not always clear what the circumstances were when a student entered secondary school, and that it was up to the individual teacher to engage the student:

That would be hard, without research and without looking specifically, I’d have, as much as I’d like to see specialist in the elementary schools, I am not sure and we can always blame those who come before us for not doing their job, um I am not sure what difference it would make, I, it is a don’t know, urh you know kids come into grade 8 with maybe with less of a background but eager to learn and eager to urh, eager to move ahead with stuff so, it um it would be an advantage, and it would be nice to see from my perspective (Robert, 07/03/09).

There is a slight differing of opinions here; it is obvious that Anne believes that physical education is a vital part of the school curriculum, while Robert skirts around the issue not really wanting to give an opinion, either way. This may be due to the different school systems, public and independent.

Throughout this section, it has become very apparent that the issue of implementing TGfU is a complex one and quite clearly shows how one factor affects another. As discussed above, the participants suggest that many students enter secondary school with few or poor skills. There is a possibility that the students are held to standards that are above their capabilities. For example,

William's student who, through the whole of elementary school failed to hit the volleyball over the net. It is exciting though to hear how William perceives that the TGfU concepts implemented by him, of game modifications and a little critical thinking can produce successful results and create more accomplished, motivated students.

A useful side note here is an article by Locke and Graber (2008) that addresses the argument raised by the participants regarding the lack of elementary specialists. They suggest that yes, pedagogical classroom teachers are not equipped to teach PE, that insufficient time is allocated to PE, that the actual time spent being physically active is less than the guidelines given by health care professionals, and that it does not always correspond that quality PE results in a healthy life style in adolescence and adulthood. Rather they suggest elementary student's persistence to play for intrinsic reasons had a great effect than regimented PE.

**Table 12: Teacher/Student Motivation Summary**

	Student Engagement	Student's previous experience	Elementary physical education specialists
Margaret	Motivated to continue teaching TGfU	N/A	Advocates for specialized teachers
Amanda	Motivated to continue teaching TGfU	Sometimes surprised by lack of skill entering at grade 4	Very important
Noah	Dependant on grade level and student maturity level	Immature and unfamiliar with gym rules and their roles	"roll out the ball" mentality, strong need for more physical education teaching
William	Motivated to continue teaching TGfU	Found some students unprepared, nervous and none motivated when entering secondary school	Advocated for specialists at elementary level, if TGfU was to succeed Felt generalized teachers lacked confidence and knowledge in gym
Ben	Dependant on grade level and student maturity level	Immature and unable to make decisions at lower secondary level grades	
Martin (Primary Colleague to William)		As a Dad, daughters went 2, 3 or more years without quality physical education instructions	Necessary to help provide continuous physical education for elementary students, need for district coordinator
Kathryn (Primary Colleague to Noah)			Felt generalized teachers lacked confidence and knowledge in gym Alleviate some of the skill/knowledge issue and help TGfU implementation at secondary level
Anne (Principal for Margaret & Amanda)			Very important
Robert (Vice principal for William)		Cannot blame grade 8 student physical education level on previous experiences at elementary school	

The summary table above highlights the interwoven issues that arise from student and teacher motivation. It is very clear, as it should be that teachers are motivated if they see their students' participation, enjoyment, understanding, and educational/social/intellectual accomplishments increase. In addition, this occurred to some extent where the educator implemented TGfU, resulting in

increased motivation for the educator. What becomes apparent is the background setting for this achievement. As noted by Noah and Ben, the success of implementation partly corresponded with the maturity level of their students. Both decided to implement TGfU into their higher grades, grade 10 and above. This is opposite to William, who first implemented TGfU into his grade 8 classes and following the success he found in those classes expand TGfU his other classes.

Throughout the interviews, it became clear that the prior experience of students transitioning from elementary to secondary school were shaped by whether their students had attended an elementary school that taught quality PE. The issue they argued hindered the knowledge, skill, and motivation of students entering secondary schools. As well, the participant perceived the lack of a qualified elementary physical educator as limiting the possible implementation of TGfU within the public elementary school system.

### **Time and Planning: “allow it more time and wait for it to work”**

Time was an important factor encapsulated in many different ways for different stakeholders. For example, it ranged from (1) the time it takes to plan questions and units, (2) release time for professional development and discourse, (3) the time it takes to gain experience and develop teaching skills. As Nielsen and Triggs (2007) suggests, providing time and space for educators to develop their teaching skills and knowledge within a learning community is fundamental for successful implementation of new initiatives. Moreover, as previously discussed, time has a huge influence on the effectiveness of the other inter-connected (endogenous) factors.

### **Participants**

For the participants time was a concern. When considering TGfU, at first some were hesitant to teach it in all their classes, and instead discussed implementing it into other classes and other units as their comfort level increased. For example, even though having selected to implement TGfU first

into his grade 8 class, who were new to the school and therefore had no prior secondary PE experiences, William was impressed with TGfU and the positive response from his students. Even with this success, he still thought he needed more time and resources before implementing it into all of his classes:

So those, I am of starting to see the concepts and add it in, but I think it will take a little bit of time to build up that repertoire (William, 01/10/09).

Amanda also discussed the idea of implementing pieces of TGfU in combination with what and how she was currently teaching. This meant she used a combination of adapted games and equipment with some questioning. She suggests that it was only when she had time to re-organize her units that she would consider implementing TGfU further into her teaching practice:

So I think you can include bits and pieces of TGfU into anything, and I think that is how I see myself until I have time to sit down and rework my units, so I will be using more of a combination (Amanda, 28/09/09).

Margaret echoes Amanda's comment about spending more time planning, and states that:

Planning the questions to ask the kids, I um I certainly just done that as it comes but that well that came from again with taking a Pro-D with JB and just experiencing the questioning and answering, and um but um, I think I realize um personally I need to spend more time on my planning for sure, having experienced those courses and just, just so that I really do take advantage of the opportunities the teaching opportunities because I perhaps, I have been a little lazy just because I am comfortable with the subject matter but...(Margaret, 28/09/09).

This is a good example of where the factors intersect with each other. Yes, it takes time to plan the questions for the student, because as I discussed above her students responded very positively to the type of constructivist questions TGfU promote. She also talked about professional development and how, by attending a TGfU workshop at a pro-D day and the Master's courses, she understood more about how and what kind of questions to ask.

This relates back to William's point about building your repertoire and taking the time to feel more comfortable in your teaching skills and knowledge

before expanding the implementation of TGfU further. William reiterates this by suggesting that:

I think I have worked more towards implementing it, can we go all the way on implementing it, for sure as soon as I have the repertoire, the knowledge and confidence to do that then I think that we are going to definitely go that direction, because I, I like it (William, 04/11/09).

William insinuates here that for him to gain the repertoire, knowledge and confidence will take time, but as he quite clearly states that once gained, there is no doubt he would like to see a greater presence of TGfU in his teaching and department. He continues by suggesting that time to gain confidence is a factor with implementation but he also believes that resources are key for this to happen and key to expanding TGfU into his department with his fellow colleagues:

I think more planning, getting together and planning out, um the games and putting them on paper like some of the books that are out there, and saying here are games that can be played with this sport, this sport here is your unit plan, I think you'll have more, especially newer teachers coming in and saying, oh that's great, I want to give it a try (William, 04/11/09).

It is suggested here, that William like many teachers gain ideas for planning classes from ministerial resource kits that are supplied to their departments. He also suggests that these resources would be shared to provide a collective learning experience with his colleagues.

Margaret reiterates this by saying that she needs to take more time to plan her classes, "I had I sort of had a realization how I do need to take the time to really do more planning when I see how the units can be developed" (Margaret, 02/11/09).

Even though Noah recognizes the benefit of TGfU, he initially struggled with the time that the TGfU method and especially the questioning portion took away from the student's activity time:

My, my concern about that is that in the short run is that if you are doing all this, if it is taking more time and effort in the lesson, if it is going to be a little messy because it is student centred, the time for questioning and all that, in the short run are you really doing urh the

kids do they deserve in terms of getting their hearts rate up and stuff like that, in terms of the long term there is no question that it would be better, umm I think that already I am seeing more inclusion in my class in terms of depth of the kids that are participating (Noah, 30/09/09).

Noah seems to contradict himself a little, still needing time to work through his concerns. Initially, he was against taking time away from the student's physical participation for questions and discussion, he then seems to talk his way around to suggesting it is a good thing, because of the general increased motivation and participation of his students.

Ben talks about time in relation to teaching experience and the time you give to your students when you expose them to new experiences:

I think it is the kids a lot, and then I think it's um the time that you give to it and allow, and you can start feeling that really um you know it is not about you when you're teaching (Ben, 03/10/109).

He continues with this line of thought when he suggests that knowing how long to give students with new initiatives is really dependant on the experience level of the teacher:

Maybe it does, maybe experienced teachers realized that it isn't really about them, so there is less pressure on them, they just believe in what they are doing and allow it more time and wait for it to work (Ben, 03/10/109).

Ben recognizes that time is a key factor for the students as well as himself when implementing new initiatives. He suggests that the TGfU readings and the experiences he gained during the summer institute were valuable in helping him step back and give the students more time to engage in the class activity:

You know because it is a process, so the kids who, you know once the kids, like if you see you know, when I am teaching I am kind of okay they are not involved at the moment but just wait and just give them another 5 minutes, and wait until they start to get involved until they start playing, and that I am aware of that now, that's from the TGfU reading right and the Game, Game Sense approach, you know once the kids think that it is their game and get more involved, you have to give them more time, unstructured time to, so yeh (Ben, 10/12/09).

Ben realized that by giving his students a little more time really benefited them as well as what he was trying to achieve in his classes. He also talked about "bettering" his teaching skills, which takes time and experience, as he suggests,



“[I]t goes back to getting better at it, you know it is a skill right, as a teacher its scary...as my skills get better the students are going to” (Ben, 03/10/09).

For the teachers the factor of time is complex, interrelating with other factors such as the planning of questions and units, how much time to give students to respond to TGfU games and concepts, and how much time to give themselves before expanding it further into their teaching practice.

### Primary Colleagues

Time for the primary colleagues was touched on briefly. In her primary colleague interview, Amanda mentioned that getting out to a PETE association workshop was difficult because of the lack of time she had in the evenings and suggested offering it during the school day:

I would like to say okay lets do it on a day when everybody gets release time and I can do it within the school day, and I mean I could get release time here for that, I know Margaret and I are lucky that we can do that, many people couldn't maybe get that release time to go and do that, but just to have an hour and half on an evening, it's big for me to get out and do it (Amanda, 08/12/09).

Even though Amanda had difficulty finding the time to attend the PETE association workshops, Margaret commented that for some it was commitment rather than time that stopped them from attending. As she suggests, “It's just that I am sure people can't be bothered, not committed to it” (Margaret, 15/12/09). Margaret who is a founding member of the PETE association is obviously disappointed at the lack of commitment; there is also a suggestion that the teachers, being busy people, prioritize their time.

Kathryn linked time as a factor when discussing developing connections with the elementary feeder schools. She suggested that when TGfU is seriously considered as an alternative method of teaching physical education, then she was prepared to develop TGfU workshops with the elementary generalized or physical educators:

If you are serious it'd be kind of neat to go and try and implement it with them so that they can start off, so the PE teachers over there can start it off, so that when they come here they know the concepts already (Kathryn, 16/12/09).

Even though the primary colleagues only briefly touched upon time, there are obvious links that inter-relate it with the professional development, and teacher and student motivation factors.

## Principals

Time for the Principals related to two areas, time spent in discussion and consultation with the teacher about their new initiatives, and time created in the timetable for professional development and planning.

Joanna stated that she spent time communicating her school vision and goals with the teachers and in doing so provided time for the teachers to discuss new initiatives:

I spend a lot of time talking to teachers communicating the vision and going there and teachers spends a lot of time talking to me about how they are feeling about how their urh programs, initiatives, urh curriculum fit into that framework and vision (Joanna, 17/12/09).

Anne reiterated this, suggesting that as principal she promotes the use of professional dialogue to create professional growth in a school, which all takes time:

Well, you know I think principals are quite typical in that, they really, they really set the tone for dialogue and opportunity for growth and change and revision, and you know it is not about taking the school in a totally different direction, it is about urh improving and urh growing, and it is the power of dialogue (Anne, 07/12/09).

Robert agrees that the most direct role a principal or vice principal can have is to provide time for their teachers in debating ideas and teaching initiatives:

the most direct role that someone like me would have, is try and understand what they are doing and provide support and advice if you can (Robert, 07/04/10).

Nigel echoed these comments by saying he would expect teachers to approach him with new initiatives and spend time discussing the pedagogical components:

I would expect that he (Noah) would come and explain to me urh what he is trying to do, why he is trying to do it and we would

talk to together on what he needs in order to [do it] (Nigel, 10/12/09).

Three of the four principals interviewed highlighted the fact that they provided time in the timetable for the teachers to discuss ideas through shared preps, and/or discussion and/or dialogue groups during lunch break or after school. This seemed to be more prominent in the independent schools than the public schools. Anne stated that the teachers shared prep for professional dialogue:

So you know one of the ways that we support urh teachers is to make sure that they have time for shared dialogue, so that in timetabling they have shared um, what we called shared prep, so that they can share um that professional dialogue around ideas and concepts (Anne, 07/12/09).

Noah, teaching at a small independent school as the only full-time physical educator, means he has to visit other schools for professional dialogue with his peers, as Nigel explains:

So time for Noah is more of an issue then for anything else, so the way we support, one of things we do is have a flexible schedule for him, he only teaches in the afternoons, and he has lots of time available to him in the mornings, we have talked to him about speaking with other professionals, offered him to go see other schools, because he really doesn't have a professional team here that he can work with (Nigel, 10/12/09).

Robert discussed the potential at his school for a modified schedule that provides time in the school timetable for teachers to develop professional learning communities. Joanna also stated that as well as the official professional days she provides six collaborative days a year for teachers to meet for professional dialogue and planning:

We usually have 6 full collaboration days a year and that provides time for teachers to meet, departments to meet and to develop programs (Joanna, 17/12/09).

All the principals appeared to be receptive to the idea of providing time for teachers to develop and plan new initiatives.

The time factor is therefore fundamental for professional dialogue and professional development. It is also an issue when considering the practicalities of teaching, such as planning. Time gives and takes away, as has been suggested by creating time in the timetable it provides opportunity for

professional dialogue that helps support implementation of new initiatives. It also inhibits physical educators when the demands of their position, such as coaching, limit their ability attend out of school workshops and associations.

**Table 13: Time Summary**

	Participants	Primary Colleagues	Principals
Margaret	Planning, questioning	Amanda - out of school workshops/associations	Anne - Share/discuss ideas, release time for pro-d, shared preps for teacher dialogue
Amanda	Planning units	Margaret	Anne - Share/discuss ideas, release time for pro-d, shared preps for teacher dialogue
Noah	Concerned about questioning vs. heart rate	Kathryn – develop TGfU workshops with feeder schools	Nigel – flexible schedule, release time for out of school professional dialogue
William	Develop TGfU repertoire, knowledge, comfort level, planning	Martin	Robert – discuss ideas, suggestion of time for professional dialogue groups
Ben	Experience in knowing how much time to give students with new initiatives	N/A	Joanna - Share/discuss school vision/ideas, increase collaborative days

Firstly, the summary table highlights the amount of time that is allocated to developing professional dialogue groups with either colleagues and/or principals. This suggests a growing emphasis on creating time for collective learning with all stakeholders. The second point to highlight, one that is critical for the implementation of new initiative, is the importance of experience. As stated by Ben, the idea of giving students the time and freedom to explore new ideas is essential for successful implementation of TGfU.

### Factors Summary

It became increasingly clear through the development of the research findings that successful implementation is not simply one individual working alone to implement change, but rather a complex network of different interrelating factors and stakeholders. As detailed above, the factors that facilitate the implementation of TGfU into the teaching practice of physical educators are

interwoven (endogenous), with each factor affecting the other. For example, time provides opportunity for professional discourse and development that is accomplished through communication with peers and colleagues. What became apparent are the different types of systems that support the teachers' implementation. The identification of the different collective learning systems will be discussed through the lens of complexity thinking in chapter five.

## Chapter 5: Conclusion

Personal anecdote:

*I think one of the most motivating factors that cultivated my enthusiasm for TGfU was volunteering at the International TGfU conference in 2008. Here I had the opportunity to meet people from all over the world who shared the same passion for teaching games. The ideas and creativity of the presenters was inspiring, creating an infectious energy that was hard to contain. Even though there were renowned TGfU focused academics, there were also teachers and coaches that presented an array of thought provoking sessions that left you reflecting on the possibilities for your own teaching practice. Personally, it was professional development like no other.*

### Introduction

This chapter will discuss the research findings through the lens of complexity thinking, suggesting that educators teach within different complex networks. This chapter will also briefly summarize the research findings in relation to the research literature. Finally, the implications of the research findings will be highlighted and recommendations for further study will be suggested.

### Interpretation of Data: The Complexity of the Situation

This discussion uses the lens of complexity thinking to interpret the interrelated factors that support the implementation of new initiatives into the teaching practice of physical educators. It became increasingly clear through the research findings that successful implementation is supported by a complex network of different interrelating factors and stakeholders.

By using complexity thinking as a framework for this research, the teachers are part of the intertwined learning system. (1) They are immersed in a TGfU focused Master's programme. (2) They are involved in theoretical and practical dialogue with principals and primary colleagues. (3) They have experimented with TGfU with their students, and finally (4) they have, after some reflection, constructed and adapted TGfU to best meet their teaching philosophies and the needs of their students.

The complex learning systems explored in this research study focus on the individual educator and their situation; students, primary colleague and

principals, each of whom can be identified in their own system. However, knowing that educational systems, and therefore schools are overlapping, intertwining, and nested learning systems, they have the potential to extend beyond the three agents of this research, and have potentially a more far-reaching effect. For example, the five participants as a group, are a system, with the next organizational level including their MA colleagues, the next level their professors, and then further still the university. The possibilities of the types of nested systems and their organizational levels explored are numerous. This example illustrates the complexity of the situation.

The four interrelated factors that have developed in this research study, when viewed through the lens of complexity thinking suggest that the participants have varying levels of support for the implementation of TGfU. What needs to be stated is that all the participants to some degree were successful in their implementation. It may be helpful to look at the four factors collectively rather than individually.

**Figure 4. Interrelated factors for supporting TGfU innovation**

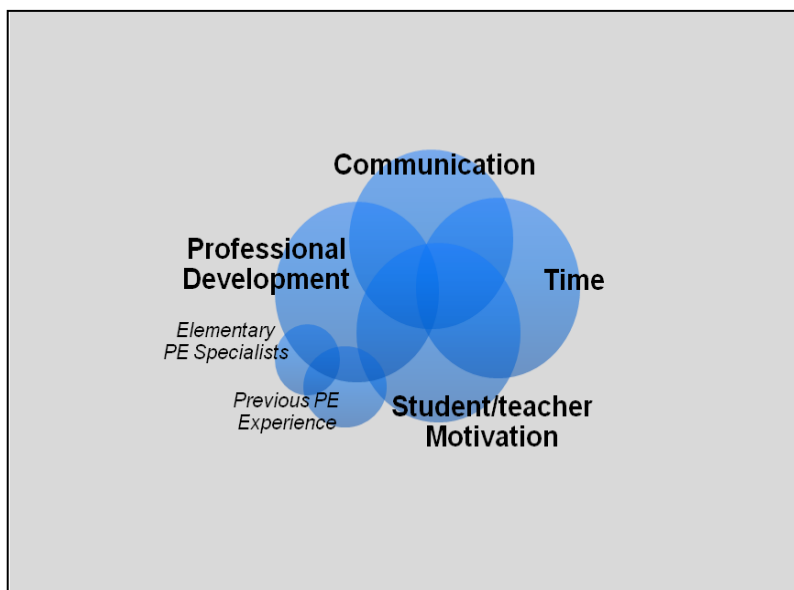


Figure 1 above illustrates how the factors overlap with each other, the centre where all four supporting facts are present at the same time, provides participants with the ultimate support, and is optimal for implementation.

Schools, as stated previously, are complex systems with multiple nested organizational layers, students, teachers, departments, head of departments, administration. Nested as described by Davis and Sumara (2008) refer to, “complex forms that unfold from and are enfolded in one another” (p.10). This neighbour interaction creates understanding of the relationships of the different stakeholders (Nielsen & Triggs, 2007). The four factors when viewed through the participants individual school systems produce both similar and differing perspectives of how implementation is supported. Acknowledged here is that associated with teaching is a certain level of professional autonomy. As such, the educator has some level of individual decision making that involves how and what they teach independent of other stakeholders.

Careful analysis through the triangulation of the research findings – participant, primary colleague and principal interviews, the two sets of TPI profiles and my research notes - suggests that the three different complex networks are present within the participant’s four schools. Agents for the purpose of this research study; represent the teachers, students, primary colleagues, and principals.

### **Distributed Complex Network**

(Refer to page 30)

#### **William’s network**

From the research findings, it can be concluded that William’s learning system is based on a distributed network. There is an overall picture of agents working independently as highlighted in the distributed network diagram. There is limited correspondence between William and his vice principal and principal. He himself stated that there was no communication between the administration and the teachers, which was echoed by his primary colleague, Martin. Further, Martin discussed at length the feeling of isolation when seeking support from the



administration or even other members of his department when wishing to implement new initiatives into his teaching. The general impression given by William and Martin is that they do what is necessary to provide a functional and adaptive learning system within their own singular teaching environment and to a certain extent within their own department. They made it very clear that the functional and adaptive learning system did not extend beyond their department and into the overall learning system of the whole school. Rather William and Martin taught independently of each other, and that of other departments and the rest of the school. Therefore, limited by an inefficient and restrictive network, new initiatives remained isolated in independently functioning departments, or even worse by teachers working alone. To highlight this point, Martin discussed how all the different subject departments in the school functioned well within their individual departments, but independently of other departments and the administration. Even though William has the support of some of his primary colleagues to help with the sharing and formulation of ideas, there is still a feeling of isolation from those who can through other means help facilitate the implementation of new ideas; through funding, release time etc.

Therefore, as stated previously, with little interdependent support from the other nested organizational layers, it is very unlikely for the whole school system to benefit from new initiatives and ideas such as TGfU.

### **Centralized Complex Network**

(Refer to page 30)

#### **Ben's network**

From the research findings it is argued, that Ben teaches within a centralized learning system. It is clear that Ben's principal has a strong and clear vision for the school that she communicates to her teaching staff. Ben is accountable to her for any new initiatives that he wishes to implement within his teaching practice. Unfortunately, there is limited professional dialogue between Ben and his primary colleague. It has to be reiterated here that Ben's primary colleague declined to be interviewed, so it is difficult to establish what role she

might have played in the discussion. Ben did discuss that it was not until recently that he had recognized himself as an emergent focused teacher, and that this teaching style may have initially confused his primary colleague. He also stated that, teacher autonomy also limited any discussion of teaching philosophy between them. This lack of communication between Ben and his primary colleague, as well as the immaturity level of his grade 8 class, can be seen to stifle the expansion of any learning at the local level or even into the next organizational level. Fortunately, as a centralized network, where information is received and sent to and from the central hub, for this purpose the principal, Joanna, learning at the local agent level has the potential to influence the whole learning system. In character with a centralized network, Joanna received and sent out information that she deemed valuable. During our interview, she did seem impressed with Ben's teaching and she did indicate that his ideas have the potential to be shared with the rest of the teaching body. It is unfortunate that the spread of ideas is restricted by the amount of information relayed to the rest of the teaching body by Joanna. It does seem to be a missed opportunity for Ben's teaching ideas to adapt and self organize around his own initiatives. Joanna was encouraging and supportive of teachers who approached her with new initiatives, and she allocated time allotted for professional development and dialogue.

For Ben, teaching within a centralized network allowed him to implement different teaching focuses and methodologies, but there is vulnerability. Centralized systems have the disadvantage of not being very robust, information is reliant on and controlled by the central hub. Therefore, the spread of new implementations are limited by what is sent and received to and from the central hub. This means the whole system is no smarter than the central hub. In this situation, the learning system that functions in this school is dependant on Joanna's support, from Ben's interviews there was no sense of interdependence with other colleagues or departments, and therefore lacked the sense that the school as a whole represented an adaptable complex learning system. The responsibility for implementation of TGfU was placed squarely on Ben's

shoulders. Principal support came in the form of release-time and professional dialogue.

#### Noah's network

Noah's situation was similar to Ben's situation. He teaches within a centralized complex network. Noah was accountable to the administration for the implementation of new initiatives into his teaching practice. He discussed how he sought approval from his vice principal. There is a sense, as suggested by Kathryn, his primary colleague, that teachers are accountable to the principal and have to justify their decisions regarding new teaching initiatives. Therefore, information is sent and received to and from the central hub, Nigel and the other administrators; Noah had to seek approval from Nigel to implement TGfU into his teaching practice. This might make for efficient communication within the network but similar to Ben's situation, it does not make for an efficient and interdependent learning environment, where all the agents, students, primary colleagues, and principals are learning, and therefore adapting within a complex learning system.

Noah's primary colleague was happy to engage in professional discussion about ideas and new initiatives. Unfortunately, Kathryn only taught two physical education classes and therefore any professional discourse was limited by time and availability. This restricted the expansion of TGfU into the next organizational level of his primary colleague. Noah's principle, Nigel, made it quite clear though that within his flexible timetable Noah had the option to seek professional dialogue with other physical educators at other schools. This of course is valuable for support and exchange of ideas in the wider physical education community, but at the local organizational level, it limits the expansion of TGfU in Noah's immediate learning system and that of the school. Nigel also supported the notion of professional development to sustain Noah's commitment to TGfU, suggesting that release time and funding was available.

Noah did implement TGfU with some success, but like Ben, he only introduced it into certain classes. As mentioned above, he found the students' previous physical education experience and maturity level a limiting factor. With his TGfU focused classes, Noah did find that his students responded well. This

created a feedback loop into an adapting learning system that created some self-organization for both Noah and his students. Unfortunately, this was not sufficient to encourage Noah to expand TGfU into his other classes. This again restricted any expansion of TGfU into the complex learning system of the school.

In a unique position, as the only full time physical educator in the school, Noah manages the physical education department and the athletic programs single handily. This creates an impression of weakness within the system where he is isolated and disconnected with the rest of the school. It also suggests that because Noah is reliant on the information relayed to and from the administration office, that the system is no smarter than the central hub.

What is pertinent to note here is that Nielsen and Triggs (2007) discuss in their research article Dufour's version of a learning community and how they describe it as being based on a behavioural approach; an approach that is based on observable results that are linked to school and district goals. This is similar for Ben and Noah's complex learning system. They both had to justify that their implementation of TGfU corresponded with their principals' vision for the school.

### **Decentralized Complex Network**

(Refer to page 31)

#### **Margaret and Amanda's network**

Margaret and Amanda have the advantage of working together in a two-teacher elementary physical education department. From the research findings, it is argued that they teach within a decentralized complex network. As Davis and Sumara (2008) have stated it is about as ideal as you can get. So let us take a closer look at Margaret and Amanda's learning system and see why it is so optimal for implementing TGfU. Margaret and Amanda work in the same department and share the same office space, equipment, and facilities. Both have been exposed to TGfU before entering into the Master's program, attending TGfU focused workshops, provincial professional days and national conferences. This makes it easy for them to debate and initiate new ideas, such as TGfU, into their teaching. They have the opportunity for professional dialogue not only with

each other but other teachers and their principal, which stretches over three organizational nested layers of the their decentralized complex learning network.

Their principal, Anne quite clearly pointed out that she believed that it was important to make time in the timetable for professional dialogue between different departments to discuss the overlapping and interdependent learning concepts that are found in all subject areas. Unlike Joanna, who as suggested above, administrates within a centralized focused network, and spends time, as she states, “communicating the vision and going there and teachers spends a lot of time talking to me about how they are feeling about how their urh programs, initiatives, urh curriculum fit into that framework and vision (Joanna, 17/12/09). Anne, in contrast releases that control within the decentralized focused network, and attempts to encouraged teacher dialogue and dialogue within the different organizational layers. As she indicates principals, “... really set the tone for dialogue and opportunity for growth and change and revision...it is about urh improving and urh growing, and it is the power of dialogue (Anne, 07/12/09). The emphasis for Anne is to release the control and give the opportunity for growth through teacher dialogue and shared ideas. This is in contrast to Joanna, who places emphasis on the teacher’s meeting her vision for the school.

Within the decentralized network, this means there is a degree of self-organization. The teachers are self organizing around the teaching of similar concepts and instigating feedback loops that send information back and forth into the learning system. As well there is redundancy; all the teachers are elementary teachers but also internal diversity because of their different learning perspectives and subject areas, where Margaret and Amanda use physical movement to create critical thinking others might use music or mathematics.

Margaret and Amanda are also fortunate that they had students who enjoyed physical education and responded well to TGfU. Through their joint effort, their students had the advantage of continual exposure to TGfU throughout their elementary physical education classes, grade after grade. This encouraged feedback loops as well as self-organization at the local level. Students motivated by the modified games, questions, and discussion invested

their energy into TGfU concepts presented to them. Learning occurred through information being received and sent, through the interwoven and interdependent nested organizational layers of the school. This created a balance between robustness and efficient communication that adapted as the learning took place. Therefore, responsibility for the implementation of TGfU was not wholly dependent on Margaret and Amanda, but rather shared throughout the complex learning system.

### **Summary Comments**

Even though Margaret and Amanda's situation is the most advantageous of the situations considered because of the supportive nature of their school community/system, in this research study shows it is still possible for teachers to initiate new ideas. What is important to remember is that at the start of this study all of the participants were participating in the Master's program, which suggests an intention to develop their educational knowledge and teaching practice. The Master's cohort is an ideal environment for the participants and the other MEd. students to accomplish this and build their own complex learning system that provides a forum for them to discuss and debate ideas. The cohort is approximately twenty-five in number, and had participating students from all over the province. It should be noted this number is small when we consider the number of physical educators practicing in British Columbia.

In this research study, professional development played a fundamental role in the participant's desire to implement TGfU. Without the Master's program or for Margaret, Amanda and Ben professional development days and conferences, it is reasonable to assume that the TGfU method would have no place in the physical educators classes and more importantly, have no influence in the way their students learn games. Professional development is critical if TGfU is to make any effectual change in the physical education classes of British Columbia, change that from the participants reported response their students' welcomed.

## **Conclusion**

As noted in chapter four, this research study investigated factors that supported the implementation of TGfU into the teaching practice of the participants. There were four overlapping and interdependent factors that became apparent; communication, professional development, teacher and student motivation and time. Each teacher received varying levels of support dependant on the complex networks that existed within their school. As indicated, three complex networks were identified - distributed, centralized and decentralized - when all four factors were supported and incorporated within an efficient and robust complex learning system, the decentralized system became the optimal choice for implementation.

What must also be recognized at this point is the involvement of the TPI. The TPI was instrumental in stimulating discussion around the educators teaching perspectives and ultimately their teaching philosophies. The TPI profiles became part of the underlying foundation that enabled them to critically approach the implementation of TGfU into their teaching practice. I believe the TPI discussions helped create the intellectual space for the educators to first question and then adapt their teaching perspectives.

## **Discussion**

The literature suggests there are many factors that influence the successful implementation of teachers' new initiatives into their teaching practice. Not unlike my own study, Bechtel & O'Sullivan (2007) suggested that factors such as the role of students, the school principal and of professional development have a strong influence on a teacher's ability to implement change. What became very apparent within this research study is the motivation factor. There is no mistaking that both educators and students react positively to the implementation of TGfU. Student support as Bechtel and O'Sullivan (2007) concurred is key for the educators to sustain their implementation. Additionally, the role of the principal and professional development seems to hold varying levels of agency for this research study. For example, when discussing the role

of the principal, it was determined that some principals provide a more egalitarian approach to implementation of teaching initiatives, while others have a more authoritarian approach. Egalitarianism loosely correlates with the characteristics of decentralized networks of a complex learning system. That suggests that they are non-hierarchical in nature (Collins, 2008). Of course as previously mentioned, Davis et al. (2008) suggest that a decentralized network is the fingerprint of a complex learning system.

Professional development was a fundamental factor for all stakeholders, not just for the teachers themselves but also for other organizational layers of the system. Additionally, it highlighted the need for elementary physical education specialists. The participants reflected on the effect of fewer physical education specialists at the elementary level, which they believed resulted in less skilled and motivated students in this subject area entering secondary school. The participants also commented on their concerns for the generalized teachers, who many thought lacked the knowledge and skill to teach physical education and more importantly TGfU. Professional development was argued as one way to alleviate these stresses and additionally support elementary teachers with their physical education teaching content. It was believed that only with TGfU focused professional development would result in the successful implementation of TGfU into the elementary school.

What also became apparent from the research findings is the type of professional development that is being established in the schools. There is a growing presence of learning communities or as Wenger et al. suggests communities of practices. Principals discussed how they created space and time within the school schedule for teachers to participate in either professional dialogue groups, shared preps, and/or encourage extra professional days to develop and plan ideas and initiatives. Unfortunately, as mentioned previously, not all of these were 'true' learning communities based on Hargreaves (2003) or Wenger's et al. (2002) definition of such; where established decentralized control created an environment for creativity and innovation of actual learning. Some, I suspect were based around established prescribed learning, the transfer of ideas



that are more concerned with results and goals than the notion of self-transforming learning.

If the decentralized complex network as suggested above increases the likelihood of creating the optimal conditions to support the expansion of the TGfU method, then the question has to be asked, how this can be replicated in other schools. Not only can it be replicated into the next organizational nested layer of the education system, the school district, and province but also dare we dream, the Canadian physical education system as a whole. It is unfortunate that schools and the education systems are institutions based on hierarchical structured organizations. It is rare to find anything different especially within the education system itself, the teacher can be seen at the bottom of the hierarchical ladder and the provincial ministry at the top. It is difficult, no matter how much the decentralized network appeals to our more egalitarian sensibilities, as a fascinating and exciting prospect, whether it will be co-opted as the next education revolution. Although in the example of Margaret and Amanda's situation, it has been proven possible to some extent, it is important to remember that they teach in a small independent school that has been successful in its attempt to incorporate a learning system that is based on the principles of a decentralized complex networked system. The question then arises if the situation would still be the same in a larger school. Therefore, aware that our public education system was historically styled on the education system of English independent (public) schools, and especially physical education, there may be hope for us yet!

## **Implications**

The summary table below provides the key points from the research findings. The message here plainly illustrates the need for clear and open communication between all stakeholders that develops a support system that combines an equitable share of responsibility. There is a strong emphasis placed on traditional professional development, which though critical for enhancing an educators' teaching practice, should I believe not be used as a substitute for a

lack of internal support. The internal support I promote should provide the opportunity for educators to create learning communities where situated learning takes place within an emerging environment.

Organizationally, this may be problematic within the public hierarchical school system. Never the less, for implementation to be successful there needs to be a proportionate level of decentralized control within the whole school and support from the district. This requires a loosening of control from the principal replaced by shared responsibility and promotion of innovation based on shared and situated learning. This creates different conditions of operating within the school. Through encouraging educators to develop learning communities and communities of practice, there is less emphasis placed on individuals to problem solve and create solutions for their learning and classroom issues, often this creates conditions that when combined with teacher autonomy harbour a feeling of isolation for the educator. Instead what would be useful is to create an environment that promotes cooperative allegiance resulting in collective intelligence, that can be encouraged to cross more than one organizational layer, hopefully incorporate other stakeholders such as principals, educators from other schools and even district personnel.

**Table 14: Conclusion Summary**

Stakeholders	Supporting Factors
Physical educator	Need extended time to feel comfortable implementing TGfU, require positive feedback from students, suggest release time for both internal and external Pro-D, professional dialogue, learning communities Seek support for the re-introduction of elementary physical educators
Primary colleagues	Provide support through professional dialogue with their peers, think pro- D is key for sustaining implementation Seek support for the re-introduction of elementary physical educators
Principals	Strong emphasis placed on life-long learning through Pro-D & professional dialogue, therefore need to provide release time and intellectual space to support this initiative. Need to provide and share clear/supportive communication with educators

### Limitations

There are obvious limitations of this study. One is time; the length of the time for change to occur is short, just 5-6 weeks between interviews. The

teachers found they had limited time to implement TGfU into one or possibly two of their classes and gauge their student's response before expanding the method into other classes. Although as pointed out in the chapter four discussion, Margaret and Amanda had the advantage of witnessing the positive results of sustained TGfU teaching in certain games units.

### **Recommendations**

Recommendations for further studies are to extend the length of the study, extend the length of time between interviews, and possibly increase the number of interviews of each participant. Another recommendation for further study would be to supplement the data with observations of the classes. It would be extremely beneficial to revisit these participants in six months or in a year's time to see the affects their implementation have had on their teaching philosophies and to investigate the continued participation and enjoyment levels of their students.

### **Future Directions**

I am hopeful that the more the teaching method of TGfU is exposed to physical educators, either through pre-service teacher education, Master programs or professional development days, the more comfortable educators will be in implementing it into their teaching practice. I would like to make a point here that relates to the research literature regarding learning communities, and it is that on many occasions the participants stated how they found the interviews a useful forum to discuss their TGfU ideas and concerns. This supports the notion suggested by Golafshani (2003), that qualitative researchers should embrace their involvement and role in their research area. I also believe this speaks to the need for more TGfU focused professional development, through workshops, professional dialogue, and the creation of internal and external learning communities. It is the case that even though some of the participants shared professional dialogue with their colleagues, some felt isolated by the lack of TGfU knowledge present within the physical education teaching body.

Presently, there are isolated pockets of professional educators promoting and teaching the TGfU methodology in British Columbia schools, colleges, and universities. The focus of this study was to discover those factors that supported physical educators' implementation of TGfU as an alternative teaching method for their teaching practice. As a TGfU advocate this is important, but what is more important is to provide teachers with the tools and support systems that give them the opportunity to experiment and expand on their own teaching practices. Through this research study and Master's program, I have come to understand how discourse aids the construction of collective knowledge. I believe that for great ideas to come to fruition it is essential to provide intellectual space and time to explore innovations, as well as expanding on established teaching ideologies and theories.

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## Appendices

### Appendix A - Participant Consent form

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September 15th, 2009

#### Consent Form

**Research Study:** Mindful Physical Education: Factors that facilitate the implementation of TGfU into the PE Curriculum

Dear Physical Educator,

We are inviting you to take part in a research study which will explore the factors that help facilitate the implementation of the teaching method of TGfU into your teaching practice. The investigation will happen in the form of two interviews and questionnaire. The interviews will be conducted by Emma Russell, MA candidate, in September, 2009 and October, 2009 and will last 30-40 minutes each.

If you take part in this research project you will be asked to do the following:

- 1) Give permission to the Principal Investigator to release your Teaching Perspective Inventory summaries for analysis (already completed for PETE summer institute courses).
- 2) Complete a questionnaire and interview in September based on TPI summaries
- 3) Complete a questionnaire and interview in October based on the third TPI summaries following a month's teaching using the TGfU model.

The total amount of time you will be involved in this project will be: a) three TPI's (60 mins), b) the initial interview and questionnaire (50-60 minutes), c) the follow-up questionnaire and interview (50-60 minutes).

There are no foreseeable potential risks to this research study. The interviews will be recorded on an audio tape recorder. Your identity will be kept strictly confidential. All documentation will be identified only by code and you will be identified by a pseudo name. The data will be kept on a computer hard disk and locked in a filing cabinet. You will have the opportunity to view the final research study prior to publication.

**Contact for concerns about the rights of research subjects:** If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598 or by e-mail to [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca)

**Consent:** Your participation in this study is entirely voluntary and you are at liberty to change your mind at any point.

**Summary of Data:** If you would like to receive a summary copy of the data collected from this study please indicate so in your interview with Emma.

By signing the attached consent form you are volunteering to be part of this project.

This research project is being organized by Dr. Joy Butler at the Curriculum and Pedagogy department, Faculty of Education, UBC. The co-investigators are Dr. Anthony Clarke, Department of Curriculum and Pedagogy, and Dr. Tim Hopper School of Physical Education, University of Victoria and Ms. Emma Russell Graduate student, Curriculum and Pedagogy department, UBC, Faculty of Education. This research project will contribute to Ms. Russell's MA thesis.

Yours sincerely,

Dr. Joy Butler, Department of Curriculum and Pedagogy, Tel: (604) 822-4974  
**Principal Investigator**

**Research Study**  
*Mindful physical education*

I consent/I do not consent (circle one) to being part of this study.

Name of Physical Educator: \_\_\_\_\_

\_\_\_\_\_  
Signature of physical educator

\_\_\_\_\_  
Date

## **Appendix B – Participant Questions - September**

### **Mindful PE - Questionnaire (September)**

**This questionnaire will be used as a starting point for discussion during the interview sessions with each participant.**

Date:

Name:

School:

1. Had you ever thought about your teaching philosophy before completing the first TPI? If so, can you explain those thoughts?
2. Were you surprised by your TPI results? How?
3. When you think about your teaching, how does it match with your TPI?
4. If you believe that the two do/do not correspond, what factors do you think influence this?
5. After the intervention of the Master's summer institute, were there any changes in your TPI, were you surprised by this?
6. If there were changes, what do you account for this change?
7. What do you think effective teaching means?
8. How do you perceive TGfU fitting into your teaching philosophy?
9. What do you perceive are the biggest rewards of teaching using the TGfU method?
10. How do you see those being incorporated into your teaching, and how do you think your students will react?

## **Appendix C – Participant Questions October**

### **Mindful PE - Questionnaire (October)**

**This questionnaire will be used as a starting point for discussion during the interview sessions with each participant.**

Date:

Name:

School:

1. Did your perception of TGfU change after the summer institute, why, how did this impact your planning for the new school year?
2. What classes did you consider using TGfU as your teaching method? Why?
3. Back in school now for a month, what aspects of the method do you view as being successful in your TGfU classes?
4. What do you contribute to these successes?
5. Initially, how did the students react? Has their attitudes changed over the last month?
6. Having had a chance to experiment with TGfU, have your opinions changed regarding what the biggest rewards of TGfU are? How have they changed? (relates to question in first questionnaire)
7. What factors do you think helped your implementation of TGfU into your teaching practice? Students, colleagues, administration, time, equipment, facilities?
8. How far from reality is the idea of implementing TGfU into all your classes, or even into all of your school's PE classes?
9. What factors would allow you/PE department/school to do this?
10. What do you think, we as PE teachers, can do to facilitate the implementation of TGfU into the provincial Prescribed Learning Objectives (PLOs)? Do you think/believe it is justified?

## Appendix D – Primary Colleague Consent Form

### THE UNIVERSITY OF BRITISH COLUMBIA



Department of Curriculum Studies  
Faculty of Education  
2125 Main Mall  
Vancouver, BC, Canada V6T 1Z4  
Tel: (604) 822-5422 Fax: (604) 822-4714

September 15, 2009

#### Consent Form

**Research Study:** Mindful Physical Education: Factors that facilitate the implementation of TGfU into the PE Curriculum

Dear Physical Educator,

We invite you to take part in a research study which will explore the factors that help facilitate the implementation of the teaching model Teaching Games for Understanding (TGfU) into the teaching practice of your colleague. We seek your consent to be interviewed for 20-30 minutes. The interview will be conducted by Emma Russell, MA candidate, in October, 2009.

If you take part in this research project you will be asked to answer questions about the kinds of support your colleague will need to implement the TGfU model in your department/school.

There are no foreseeable potential risks to this research study. The interview will be recorded on an audio tape recorder. Your identity will be kept strictly confidential. All documentation will be identified only by code and you will be identified by a pseudo name. The data will be kept on a computer hard disk and locked in a filing cabinet. You will have the opportunity to view the final research study prior to publication.

**Contact for information about the feedback:** If you have any questions or desire further information with respect to this study, you may contact Joy Butler (604) 822-4974.

**Contact for concerns about the rights of research subjects:** If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598 or by e-mail to [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca)

**Consent:** Your participation in this study is entirely voluntary and you are at liberty to change your mind at any point.

**Summary of Data:** If you would like to receive a summary copy of the data collected from this study please indicate so in your interview with Emma.

This research project is being organized by Dr. Joy Butler at the Curriculum and Pedagogy department, Faculty of Education, UBC. The co-investigators are Dr. Anthony Clarke, Department of Curriculum and Pedagogy, and Dr. Tim Hopper School of Physical Education, University of Victoria and Ms. Emma Russell Graduate student, Curriculum and Pedagogy department, UBC, Faculty of Education. This research project will contribute to Ms. Russell's MA thesis.

If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at (604)-822-8598 or by e-mail to [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca)

Sincerely,

Dr. Joy Butler, Department of Curriculum and Pedagogy, Tel: (604) 822-4974  
**Principal Investigator**

\*\*\*\*\*

**Research Study**  
*Mindful physical education*

I assent/I do not assent (circle one) to being part of this study.

Name of Physical Educator: \_\_\_\_\_

\_\_\_\_\_  
Signature of physical educator

\_\_\_\_\_  
Date



## Appendix E – Principal Consent Form

### THE UNIVERSITY OF BRITISH COLUMBIA



Department of Curriculum Studies  
Faculty of Education  
2125 Main Mall  
Vancouver, BC, Canada V6T 1Z4  
Tel: (604) 822-5422 Fax: (604) 822-4714

September 15th, 2009

#### Consent Form

**Research Study:** Mindful Physical Education: Factors that facilitate the implementation of TGfU into the PE Curriculum

Dear Principal,

We are inviting you to take part in a research study which will explore the factors that help facilitate the implementation of the teaching model of Teaching Games for Understanding (TGfU) into the teaching practice of your colleague. The investigation will happen in an interview. The interview will be conducted by Emma Russell, MA candidate, in November, 2009. Suggested dates will be arranged with your secretary.

If you take part in this research project you will be asked to be interviewed about the TGfU model that your PE teacher Peter Train is keen to implement in the PE program. The interview will take about 20-30 minutes.

There are no foreseeable potential risks to this research project. The interview will be record on an audio tape recorder. Your identity will be kept strictly confidential. All documentation will be identified only by code and you will be identified by a pseudo name. The data will be kept on a computer hard disk and locked in a filing cabinet. You will have the opportunity to view the final research study prior to publication.

By signing the attached consent form you are volunteering to be interviewed as part of this project.

This research project is being organized by Dr. Joy Butler at the Curriculum and Pedagogy department, Faculty of Education, UBC. The co-investigators are Dr. Anthony Clarke, Department of Curriculum and Pedagogy, and Dr. Tim Hopper School of Physical Education, University of Victoria and Ms. Emma Russell Graduate student, Curriculum and Pedagogy department, UBC, Faculty of Education. This research project will contribute to Ms. Russell's MA thesis.

If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at (604)-822-8598 or by e-mail to [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca)

Sincerely,

Dr. Joy Butler, Department of Curriculum and Pedagogy, Tel: (604) 822-4974  
**Principal Investigator**

**Research Study**  
*Mindful physical education*

I consent/I do not consent (circle one) to being interviewed as part of this study.

Name of Principal: \_\_\_\_\_

\_\_\_\_\_  
Signature of Principal

\_\_\_\_\_  
Date

## Appendix F – Primary Colleague Questions/Information Sheet

### Primary Colleague

#### Brief description of study

All of the research participants attended a two week TGfU focused summer institute, as part of their PE cohort master's program. Each was asked to take a Teaching Perspective Inventory (TPI) questionnaire three times, one before the institute, one after and one at the end of October to explore any changes in their teaching philosophies/beliefs/perspectives, two interviews were conducted, one at the end of September and one at the end of October.

#### My Research Study Questions

What factors help facilitate the implementation of the teaching method of TGfU into the PE teacher's games teaching practice?

How do teachers' beliefs, as reflected by the TPI, influence their ability to implement TGfU approaches into their practice?

**Teachers Perspective Inventory (TPI)** is an on-line questionnaire that identifies teaching perspectives that are based on an inter-related set of beliefs and intentions related to knowledge, learning and the role of the teacher.

**Teaching Games for Understanding (TGfU)** is a student centred approach to teaching games in P.E. The teacher's role is one of facilitating the student's learning. The teacher initiates tactical understanding of games through the use of modified games, questioning and the development of decision making skills. TGfU teaching methodology is ground in social constructivism theory.

**Social constructivism** can be defined as emphasizing the social interaction of the student, that is, students gain knowledge through social interaction in a collective form rather than as an individual. Within social constructivist theory there is strong emphasis on group work where the students are given a problem to solve and the teacher facilitates their learning with the use of meaningful questions, which encourages critical thinking.

---

#### Questions for Primary Colleague

This research study is primarily looking at factors that help P.E. teachers implement new ideas and initiatives into their teaching practice.

1. How does your school community support those teachers who wish to implement new initiatives into their teaching practice? Department support, cross-curricula support, student support, parent support etc.
2. How do you see your role in helping those teachers who wish to implement new ideas and initiatives into their teaching practice? Intellectual, scheduling, equipment, facilities etc.
3. Do you believe that on-going and networked workshop through Professional development days, subject/department associations and conferences are fundamental in sustaining a teacher's commitment to new initiatives? Why, why not?
4. How does P.E. fit into the school wide philosophy or mission statement of your school?

## Appendix G - Principals Question/Information Sheet

### Brief description of study

All of the research participants attended a two week TGfU focused summer institute, as part of their PE cohort master's program. Each was asked to take a Teaching Perspective Inventory (TPI) questionnaire three times, one before the institute, one after and one at the end of October to explore any changes in their teaching philosophies/beliefs/perspectives, two interviews were conducted, one at the end of September and one at the end of October.

### My Research Study Questions

What factors help facilitate the implementation of the teaching method of TGfU into the PE teacher's games teaching practice?

How do teachers' beliefs, as reflected by the TPI, influence their ability to implement TGfU approaches into their practice?

**Teachers Perspective Inventory (TPI)** is an on-line questionnaire that identifies teaching perspectives that are based on an inter-related set of beliefs and intentions related to knowledge, learning and the role of the teacher.

**Teaching Games for Understanding (TGfU)** is a student centred approach to teaching games in P.E. The teacher's role is one of facilitating the student's learning. The teacher initiates tactical understanding of games through the use of modified games, questioning and the development of decision making skills. TGfU teaching methodology is ground in social constructivism theory.

**Social constructivism** can be defined as emphasizing the social interaction of the student, that is, students gain knowledge through social interaction in a collective form rather than as an individual. Within social constructivist theory there is strong emphasis on group work where the students are given a problem to solve and the teacher facilitates their learning with the use of meaningful questions, which encourages critical thinking.

---

### Questions for Principals

This research study is primarily looking at factors that help P.E. teachers implement new ideas and initiatives into their teaching practice.

1. How does your school community support those teachers who wish to implement new initiatives into their teaching practice? Department support, cross-curricula support, student support, parent support etc.
2. How do you see your role in helping those teachers who wish to implement new ideas and initiatives into their teaching practice? Intellectual, monetary, scheduling, facilities etc.
3. Do you believe that on-going and networked workshop through Professional development days, subject/department associations and conferences are fundamental in sustaining a teacher's commitment to new initiatives? Why, why not?
4. How does P.E. fit into the school wide philosophy or mission statement of your school?

## Appendix H – Participant Request Letter

### THE UNIVERSITY OF BRITISH COLUMBIA



**Department of Curriculum and Pedagogy**  
**Faculty of Education**  
 2125 Main Mall  
 Vancouver, BC, Canada V6T 1Z4  
 Tel: (604) 822-5422 Fax: (604) 822-4714

September 15th, 2009

**Research Study:** Mindful Physical Education: Factors that facilitate the implementation of TGfU into the PE Curriculum

**Dear Physical Educators,**

You are invited to take part in a research project that will explore the factors that facilitate the implementation of the teaching method of Teaching Games for Understanding into your physical education teaching practice.

This project will take place from September to November, 2009. The investigation will include two interviews and a questionnaire.

#### **Criteria**

##### **Gender**

- ❖ three male physical education teachers
- ❖ three female physical education teachers

##### **Years of experience**

- ❖ 10 or more years of teaching experience
- ❖ 6 or less years of experience

#### **Procedure**

Teaching Perspective Inventory (TPI) is designed to give perspectives on teaching, it is an inter-related set of beliefs and intentions related to knowledge.

##### **TPI will be completed three times:**

- ❖ before a two-week Masters course
- ❖ immediately after the course
- ❖ following one month experimentation of TGfU within your teaching practice

#### **Interviews**

- ❖ In September – 30 minutes, in conjunction with questionnaire
- ❖ In October, after implementation of TGfU – 30 minutes, in conjunction with questionnaire

If you chose to volunteer for this project you will be asked to release your TPI assignments for analysis. To further our investigation, we will also request interviews with your primary colleague and principal.

This research project is being organized by Dr. Joy Butler from the Department of Curriculum and Pedagogy, Faculty of Education, UBC. The project will contribute to Ms. Russell's MA thesis; she is a Graduate Student from the Department of Curriculum and Pedagogy, Faculty of Education, UBC.

If you wish to volunteer, please contact, either Dr. Joy Butler at (604) 822-4974, [joy.butler@ubc.ca](mailto:joy.butler@ubc.ca) or Ms. Russell at (778) 996-4107, [emmar1565@hotmail.com](mailto:emmar1565@hotmail.com)

Yours sincerely,

Dr. Joy Butler, Department of Curriculum and Pedagogy, Tel: (604) 822-4974  
**Principal Investigator**

## Appendix I - Mapping Ideas – Figure I-1







## Appendix J – UBC Research Ethics Board Certificate



The University of British Columbia  
Office of Research Services  
**Behavioural Research Ethics Board**  
Suite 102, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3

### CERTIFICATE OF APPROVAL - MINIMAL RISK

<b>PRINCIPAL INVESTIGATOR:</b> Joy Butler	<b>INSTITUTION / DEPARTMENT:</b> UBC/Education/Curriculum and Pedagogy	<b>UBC BREB NUMBER:</b> H09-01595
<b>INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:</b>		
<b>Institution</b> UBC		<b>Site</b> Vancouver (excludes UBC Hospital)
Other locations where the research will be conducted: 4 Schools - physical educators and principal's offices, school location of the participants.		
<b>CO-INVESTIGATOR(S):</b> Anthony Clarke		
<b>SPONSORING AGENCIES:</b> N/A		
<b>PROJECT TITLE:</b> Mindful Physical Education: Factors that facilitate the implementation of TGfU into the PE Curriculum		

**CERTIFICATE EXPIRY DATE:** September 10, 2010

<b>DOCUMENTS INCLUDED IN THIS APPROVAL:</b>		<b>DATE APPROVED:</b> September 10, 2009
<b>Document Name</b>	<b>Version</b>	<b>Date</b>
<b>Consent Forms:</b>		
Consent form for Principals	2	September 10, 2009
Consent form for participant	2	September 9, 2009
Consent form for colleagues	2	September 9, 2009
<b>Questionnaire, Questionnaire Cover Letter, Tests:</b>		
Mindful PE - Questionnaire (October)	1	August 3, 2009
Mindful PE - Questionnaire (September)	1	August 3, 2009
<b>Letter of Initial Contact:</b>		
Request for participants	2	September 9, 2009
The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.		
<p>Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:</p> <p>Dr. M. Judith Lynam, Chair Dr. Ken Craig, Chair Dr. Jim Rupert, Associate Chair Dr. Laurie Ford, Associate Chair Dr. Anita Ho, Associate Chair</p>		