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Pre-service teachers' perception of Teaching Games for Understanding: A Hong Kong perspective

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Abstract
This study aims to examine pre-service physical education (PE) teachers' perception of Teaching Games for Understanding (TGfU) in Hong Kong. Adopting a qualitative approach, 20 pre-service PE teachers (F = 8, M = 12) were recruited for individual semi-structured interviews. Most pre-service teachers responded that TGfU is beneficial for students because of its tendency to enhance students' engagement, stimulate their thinking and include students with varying skill levels. However, difficulties in understanding the nature and implementation of TGfU have been encountered. The results indicate that the majority of pre-service teachers are likely to use TGfU in the future, while a handful of them prefer to implement the skill-based approach during teaching practice due to a lack of support from cooperative teachers and a short period of teaching practice. Suggestions for improving the TGfU professional development programme and collaboration between pre- and in-service teachers are provided.

Key-words: perception • physical education • pre-service teachers • TGfU

Introduction
In past several decades and with the evolution of learning theory from behaviourism to constructivism, education has undergone tremendous change with the focus shifting from mastering skills to solving problems, creativity and student centredness (Day, 2002; Huba and Freed, 2000; Schoenfeld, 2006). In the early years of the 20th century, behaviourism dominated educational theories, and research and learning were viewed as a process of stimulating learners to behave differently. Applied in education, the behaviourist teaching approach tends to reinforce response patterns through consistent repetition. However, behaviourism is limited because the concept of mental state is discarded, and the individual as the medium of learning is the focus of the theory (Freiberg, 1999; Taylor, 2007). In response to this limitation, constructivism emerged and replaced behaviourism as the most popular paradigm for
understanding mental function in the late 20th century. As a result, the student-centred approach, premised on a constructivist philosophy, was developed. Compared with the behaviourist teaching approach, the constructivist teaching has unique characteristics. First, students are active learners rather than the passive recipients of knowledge supplied by teachers. Second, constructivist teaching emphasizes generating learning, questioning or inquiry strategies rather than information delivery. Third, teaching is a learning-teaching concept rather than a teaching-learning concept (Freiberg, 1999; Jonassen and Land, 2000).

As a subject division of education, the PE curriculum has been reformed across the world as well. It now embraces multiple dimensions, such as skill, knowledge and understanding (Penney and Jess 2004). Furthermore, problem-solving, lifelong learning and health issues are all major concerns of most PE curricula (Cothran, 2001; Penney, 2008; Penney and Jess, 2004). To meet the curriculum’s objectives, a variety of student-centred teaching approaches based on constructivism have been designed and tested (Ennis, 2006). As a constructivist approach, TGfU was initially developed by Bunker and Thorpe (1982) in attempt to shift from teacher-centred and skill-based learning to a student-centred approach linking tactics and skills within a game context. Since 1990s, scholars have proposed variations, extensions or reconsiderations to the original model (Butler, 2002; Butler and McCahan, 2005; Griffin et al., 1997; Holt et al., 2002; Kirk and MacPhail, 2002). For example, Kirk and MacPhail (2002) presented a new version of the TGfU model that draws on a situated learning perspective, while Butler (2002) and Butler and McCahan (2005) modified the original model by adding material related to Rink’s (2002) four stages of developing game play: (1) developing control of the object (2) complex control and combination of skills (3) beginning offensive and defensive strategies and (4) complex game play in the context of the TGfU model.

TGfU maintained focus on students’ learning in games education especially in the tactical understanding of game appreciation, tactical awareness, decision-making and skill execution (Light and Fawns, 2003). This model has attracted increasing interest from teachers across the world because of its potential to (a) facilitate the development of skills and tactical knowledge, (b) empower children to learn for themselves and take responsibility, (c) assess the tactical transfer across games and (d) increase the fun and enjoyment in playing games.

Butler (1996) argued that if change is to be initiated successfully in schools, we need to listen to teachers’ concerns about innovative approaches such as TGfU and the ways in which they challenge their existing beliefs and conceptions of PE teaching. Currently, although the innovation of PE curriculum and teaching has been well documented (Cothran, 2001; Ennis, 2006; Kirk and MacPhail, 2002; Penney, 2008; Penney and Jess, 2004; Rink, 2001), few studies have reported teachers’ perceptions and receptivity to undertaking innovation (Ha et al., 2008b). Therefore, the purpose of this study is to examine PE teachers’ perception of the TGfU innovation as drawn from a constructivist approach. This study is expected to provide useful insights into pre-service teachers’ (i.e. college or graduate students who are studying...
in a teacher education programme to qualify for a degree in education) receptiveness to PE innovation and offer grounds and direction for establishing effective professional development programmes. This, in turn, may lead to more effective PE programmes for students in schools.

Research on teachers’ perception of TGfU

For pre-service teachers, research findings show that most pre-service teachers have a positive attitude towards TGfU because it increases students’ engagement and stimulates students’ creative minds (Howarth, 2005; Light, 2002, 2003; Light and Tan, 2006). However, another group of studies indicates weighty challenges in the implementation of TGfU (Howarth, 2005; McNeill et al., 2004; Wright et al., 2006). McNeill et al. (2004), for example, found that pre-service teachers have common difficulties in designing units of work, clarifying the concept of TGfU, selecting content, questioning and sustaining students’ interest. Limitations of time and space are also crucial barriers for teachers in the proper implementation of TGfU. Wright et al. (2006) examined 49 pre-service teachers’ perspectives in Singapore when implementing the TGfU approach. They found that the greatest challenge in the implementation of TGfU was the primary or secondary school students’ unfamiliarity with the TGfU model, the students’ lack of conceptual knowledge and skills to play games properly and the lack of space and equipment. In western countries, Howarth (2005) reported that in the US, for example, the difficulties pre-service teachers face are related to the high level of requirement on pre-service teachers’ content knowledge about the game, complexity of analysing students’ learning abilities, and preference, and lack of time and experience.

Similar to pre-service teachers, the interview data in Light and Butler’s (2005) study showed that in-service teachers (teachers who have graduated from the education programme and begun school teaching) strongly advocate TGfU because it can provide a more equitable experience of sports and fun for all students compared with other traditional approaches. However, in-service teachers noted the limitations of TGfU, citing, for example, that the amount of preparation and adaptability required for in-service teachers and very young children (primary one to four students) do not suit the TGfU model (Light and Butler, 2005; Rossi et al., 2007). Rossi et al. (2007), as another example, argued that very young children are incompatible with TGfU because the high skill requirements and the conceptual demands of the approach are too great for some children with ‘limited skills’. Furthermore, a group of studies show that many in-service teachers are unwilling to implement TGfU in class (Butler, 2005; Evans and Clarke, 1988; Kirk and Claxton, 1999; Rossi et al., 2007). For instance, Evans and Clarke (1988) noted that the use of TGfU could not be described as widespread. Seventeen years later, Butler (2005) reported that many experienced teachers prefer traditional approaches of instruction to the constructivist approach because TGfU might be in conflict with their values, beliefs and attitudes towards teaching and learning. Several studies associated in-service teachers' unwillingness to
implement TGfU with the challenges they encountered in understanding and implementing TGfU (Brooker et al., 2000; Randall, 2008; Rossi et al., 2007). For example, teachers in the study by Rossi et al. (2007) reported that it was difficult to tell the difference between a constructivist approach including TGfU and a behaviourist approach. Furthermore, they were confused about the relationship between skills and tactics.

**Hong Kong context**

Influenced by the global PE development trend, the Hong Kong government has initiated a series of PE curriculum reforms over the past decade. First, the Curriculum Development Council (CDC) (2002) stated that the emphasis of change should be on promoting generic skills such as collaboration, communication, critical thinking, problem-solving and creativity. Second, PE was introduced as one of the curriculum’s eight key learning areas (CDC, 2002). Thus, PE has become an examination subject contributing to students’ qualification for admission to post-secondary programmes (CDC and HKEAA, 2007). These mandates imply that PE has gained more social importance and awareness. Third, the new senior secondary academic structure was supported by a flexible, coherent, and diversified senior secondary curriculum, which aimed to cater to students’ various interests, needs, and abilities (CDC and HKEAA, 2007). This indicates that the curriculum focused more on students’ individual differences and learning interest.

The PE curriculum challenged teachers to introduce new strategies and/or approaches that would promote generic skills for students. As a result, PE teaching was advised to shift from direct teaching, which addresses the mastery of skills, to a facilitative style of teaching, where the emphasis was on students’ interest and needs (CDC, 2002, CDC and HKEAA, 2007). Under this circumstance, TGfU was introduced in Hong Kong in the 1990s through workshops provided to teachers. At present TGfU is only provided as part of the pedagogy course and model for pre-service teachers. It is noticeably missing in professional development programmes for in-service teachers (Ha et al., 2008a). In recent years, a group of studies has been conducted to explore Hong Kong in-service teachers’ perception of TGfU (Liu, 1997, 2002, 2004; Cruz, 2004). The research results report that many in-service teachers have shown interest in this new approach because TGfU offers more participating opportunities and improves students’ motivation to learn (Liu, 2002, 2004). However, most in-service teachers still use the traditional skill-oriented approach in PE classes (Cruz, 2004; Liu, 1997). Liu’s (1997) study showed that 90 percent secondary school teachers in Hong Kong adopted the skill-based approach and exhibited no tendency to modify this approach. Compared with the studies focused on in-service teachers, there is only one study that focused on pre-service teachers’ perception of TGfU in Hong Kong. Conducted by Li and Cruz (2006), this study reported that, because of anticipated practical problems such as difficulties in managing the class and transforming tactical knowledge into pedagogical content knowledge,
inadequate space for games, pre-service teachers in Hong Kong displayed hesitation in adopting the model. Due to the lack of studies on pre-service teachers and TGfU, there is a need to provide better understanding on Hong Kong pre-service teachers' perception of TGfU during the learning process of TGfU.

**Methodology**

**Participants and setting**

A group of 20 undergraduates was purposefully selected as participants for their recent completion of the TGfU programme at the Chinese University of Hong Kong. These pre-service teachers, in their third year of teacher education, included 12 male and 8 female participants whose ages ranged from 21 to 30 years. All participants successfully completed the course ‘Pedagogy of Primary Physical Education’, including the TGfU programme, from September to December 2008. However, they had no TGfU teaching experience in schools.

The 14-week course on Pedagogy of Primary PE is a professional development programme available to pre-service PE teachers in the Chinese University of Hong Kong. The course aims to provide a cohort of pre-service teachers with opportunities to gain a basic understanding of the optimal methods for teaching PE at the primary school level. A variety of content areas is included in the course, such as Fundamental Movement (FM), TGfU, evaluative methods, school visit, and microteaching. In this course, four classes tackled TGfU. The TGfU theoretical knowledge was introduced by the teacher educator who is the second author of this study (two classes). In the third class, the practice section was provided by the teacher educator, in which this group of pre-service teachers attended a 40-minute TGfU class as students. Pre-service teachers were required to discuss their perception of this TGfU class afterwards. In the last class of the TGfU programme, videos of TGfU instruction were viewed, and pre-service teachers were required to discuss the instruction. The three final weeks of this course were allotted for microteaching, including TGfU microteaching. Each student was required to give a 20-minute TGfU lesson to peers.

The course was taught by the second author who is an expert on PE pedagogy and supported by the first author, who served as the teaching assistant. The first author functioned as a non-participant observer when the teacher conducted her lesson. However, the first author played the role of a more participatory observer when student raised their hands for help. Aside from this, the first author assisted teachers in preparing teaching facilities and provided feedback when requested by the students.

**Data collection**

At the end of the TGfU programme, a semi-structured interview (Merriam, 1998) was conducted with each participant between December 2008 and January 2009.
Each interview began with a discussion on the study’s purpose and an explanation of the informed consent. The interview guide was employed as the instrument for the interview. Each teacher was asked about their views of the TGfU model and the interviewer encouraged teachers to speak freely about their views. More specific questions allowed the teachers to expound on the strengths, limitations and challenges presented by TGfU. The participants were asked to present their perceived solutions to the difficulties in learning TGfU. Finally, they were asked about their willingness to use TGfU in the future. All the interviewees were required to explain their response.

All interviews were recorded on audio tape. During the interviews, key phrases, major points and interpretations were noted down and recorded to facilitate later analysis. After each interview, the researcher immediately transcribed the interview data to maintain the rigour and validity of the research and guarantee the quality of data. Interview transcripts varied in length, ranging between three and five double-spaced pages.

Data analysis

Data obtained in this study were analysed using inductive content analysis (Patton, 2002). The main goal of content data analysis is to seek concepts that represent commonalities in the qualitative data. Following Patton (2002), the management and analysis of the interview data included the following steps. (1) Twenty recorded interviews were transcribed verbatim by the researcher. Nvivo 8.0 software was used to organize recorded data and transcriptions. (2) Two researchers independently identified raw data themes for each participant. (3) Using inductive content analysis, the researcher identified 10 common themes or patterns shaped by cross-case raw data analysis. These common themes emerged as first-order themes, which were named using the terms already in the data or from other literature. These first-order themes were included under five general dimensions, such as strength and limitation of TGfU, which corresponded to the major categories, specifically, pre-service teachers’ perception of TGfU. (4) Summaries of the raw data, first-order themes, general dimensions and categories for participants were combined to form a hierarchical thematic structure. Again, consensus for this stage of analysis was achieved. The trustworthiness of this study was established using three strategies: peer debriefing (Creswell, 2007), member checking (Merriam, 1998) and analyst triangulation (Patton, 2002).

Results and discussion

A constructivist perspective is used to present and interpret the findings. Piaget’s (1970) cognitive constructivism and Vygotsky’s (1978) social constructivism are two important strands of constructivism. Piaget’s (1970) research in cognitive science suggested that individuals construct new knowledge from their prior experiences through the processes of assimilation and accommodation, while Vygotsky’s (1978)
social constructivism emphasized the role of culture and context in developing personal and shared interpretations of reality. According to cognitive constructivism (Fosnot, 1993; Piaget, 1970), individual learning is brought about by a process of assimilation and accommodation. Assimilation, Piaget asserted, occurs when an individual’s new experience aligns with his/her existing, internal representation of the world. The learner then assimilates the new experience into an existing framework. Accommodation, on the other hand, is a reflective process through which individuals transform their cognitive structures in the face of experiences that differ from their existing understanding. Under this concept, learning is essentially a process of making sense of the world through direct experience, making errors, looking for solutions and presenting information (Fosnot, 1993). Thus, in discussing pre-service teachers’ perception of TGfU learning, the strengths and limitations of TGfU, challenges encountered, recommended solutions and future use are addressed in this study.

**Strengths and limitations of TGfU**

**Strengths**

When the pre-service teachers involved in this study were asked about the strength of TGfU, most of them emphasized its propensity to engage students cognitively and emotionally, develop their intellectual development and include different students with varying skill levels.

*Enhancing engagement*

The first theme that emerged as a strength of TGfU was its capability to engage students in games cognitively and emotionally. Through ‘observations of other teachers’ instruction’, ‘microteaching’, ‘previous PE learning experience’ and ‘prior game playing experience’, pre-service teachers found that the games allowed students to be more involved in and to be valued members of the team.

Several pre-service teachers reported that they believed students’ cognitive engagement was enhanced with the TGfU approach because it allowed the students to understand tactics, strategies and game rules by participating in various games. Emphasizing this strength, Mak Yee Ling explained:

To play games, it is not enough to have relevant motor skills . . . Students have to acquire game knowledge including game rules, offensive and defensive tactics and strategies. As a result, students’ motor skills are improved by games, but most importantly, the tactical knowledge is obtained. For example, students will not only know how to pass or catch a ball, but they will also learn some strategies to make sure they can pass or catch the ball successfully in games.

Meanwhile, the majority of pre-service teachers related the students’ emotional engagement to the enjoyment provided by TGfU. Across all the interviews, a large
group of pre-service teachers revealed that they believed students would enjoy games in the TGfU approach because the games would be fun. Tsai Wai Hung verified this view through a small-scale survey on some secondary school students, ‘I conducted a small survey and sent questionnaires to a class of secondary school students to ask whether they preferred game play to skill practice in PE class. The results showed that over 90 percent students liked game play better.’ Ho Hong Yau felt the same way. He discussed students’ emotional engagement by talking about his past PE learning experience and by comparing TGfU with the skill-based teaching approach directly. He said:

When I was a primary and secondary school student, my PE teachers conducted classes with a typical skill-oriented approach. In class, we performed the same sports drills repeatedly. It was quite boring. However, when games were occasionally provided in class, we became excited and energetic. Based on my prior PE class experience, I think students want to be involved in games and are less enthusiastic about skill acquisition because games are more enjoyable and interesting for students.

**Fostering intellectual development**

The pre-service teachers involved in this study considered TGfU as a teaching approach that fosters students’ intellectual development, and this emerged as the second theme.

On the one hand, a small group of pre-service teachers reported that TGfU stimulated students’ critical thinking. Critical thinking is a central component of a constructivist approach to learning (Good, 1996). When applied in PE, critical thinking is defined as ‘reflective thinking that is used to make reasonable defensible decisions about movement tasks or challenges’ (McBride, 1991: 115). Emphasizing this advantage, these pre-service teachers revealed that students observed, judged and made decisions in games, hence improving students’ critical thinking. Lui Mei Yan commented:

In games, students observe other players, think about the tactics, make decisions on the use of sports skill, and independently resolve tactical problems that emerge during the game. The students must find the best way to cooperate with teammates to score. For example, in a basketball game, players must think and make quick judgements on locating the best offensive or defensive position and passing, catching, or shooting accurately to achieve scores by cooperating with teammates. This requires students’ quick response and critical thinking.

On the other hand, several pre-service teachers said that the TGfU model helped their students develop the habit of reflection. They revealed that teachers stimulated students to reflect by asking open-ended questions and facilitating students’ discussion and debate. Choi Yin Lap explained:
Raising questions is an important part of the TGfU class. By asking some questions or stimulating students to discuss an issue or a problem, students will actively think about what they learned in class instead of only accepting the knowledge. I think it is a good way to deepen students’ understanding of tactical knowledge.

Inclusivity

The third important theme that emerged from the three pre-service teachers’ interviews is inclusivity. These pre-service teachers reported that they liked TGfU because the games could be modified to include students with varying motor skill levels. As Law Qun Yee pointed out:

In traditional PE classes, only the students with high skill levels have the chance to participate in the games. In contrast, games with low demand on skills and minimum rules can be structured to involve the less able players of the class.

Another pre-service teacher Allen reported that the TGfU model helped to deal with students’ individual differences effectively by including students with different skill levels. Mak Yee Ling said:

I was attracted by the inclusive nature of the TGfU model because with it, teachers can consider students’ individual differences effectively in PE class. Many students are not willing to attend traditional PE classes because they are not highly skilled. With TGfU, this problem is effectively resolved by providing students a variety of modified and interesting games, which require only fundamental skills.

Limitations

Although TGfU is beneficial for students’ learning, pre-service teachers had some reservations on the approach because of its limitations for teachers and students. For teachers, more lesson preparation is needed, while for students, there are fundamental requirements in the psychomotor, cognitive, and affective domains.

Limitations for teachers

Interview results from a group of pre-service teachers indicated that more lesson preparation was needed to conduct a TGfU class. Li Lin Kai noted that teachers must put much more effort and time into the class preparation due to the lack of information related to teaching using the TGfU model. Li Lin Kai said:

At present, there is no adequate information concerning TGfU instruction, and very few teachers in Hong Kong use this approach. Most of the time, we create games by ourselves rather than refer to other teachers’ classes, hence causing some difficulties in our lesson planning.
Other pre-service teachers commented that much more time and effort were necessary for a lesson that uses the TGfU model compared with other models because the teachers have to consider many issues, such as students’ sports skill level, game experience, classroom discipline and equipment modification. All these issues directly influence the effectiveness of the TGfU class. Tsai Wai Hong reported:

A lesson that follows the TGfU approach increases teachers’ work load . . . TGfU is a new approach for us. We do not have much experience in it, and we do not know if unexpected things would occur or not in the classes that follow the model. To keep the class under control, I try to consider each part of the class carefully prior to the class. For example, when I did my TGfU microteaching, I tried to take students’ skill level, game experience, and classroom discipline into consideration in the lesson planning. Through this, I can have more confidence with my TGfU instruction.

Limitations for students
In terms of the limitations of TGfU for students, based on their previous PE learning experience and TGfU microteaching experience, a few pre-service teachers reported the need for fundamental requirements for students’ psychomotor, cognitive, and affective domains. In other words, the students taught using the TGfU approach must possess the fundamental skill, relevant game knowledge, moderate self-control and high motivation to participate in TGfU. Due to these requirements, pre-service teachers argued that some junior primary school students, for example, primary one to four students, would not be able to adapt to the TGfU model because they were not sufficiently physically, cognitively and emotionally mature.

From the psychomotor perspective, although games could be modified to counter the low-skill threshold, fundamental skills were perceived as essential for students to participate in the games. Ho Hong Yau recounted: ‘Modifying the games makes no difference when students do not even know how to pass or receive a ball.’ Lam Shu Hon added:

I will not use the TGfU model in all classes . . . I would like to teach students fundamental skill and then introduce some primary tactical knowledge through the TGfU approach. When they are already skilful and have mastered some basic tactics that is the time I will teach them more complicated skill and tactics using the traditional and TGfU approaches, respectively. I think these two approaches can be supplemented. It is impossible to play games without any fundamental movement and manipulative skills.

Considering the cognitive domain, Lee Man Chui implied that the TGfU model is more complicated than traditional direct teaching because, with TGfU, students must understand tactics and strategies, placing a high requirement on students’ cognitive level. She said: ‘I think that the TGfU model does not suit primary one to primary four students because their cognition is not yet developed to a level that allows them to understand complicated tactics and strategies.’
Considering the affective domain, Ng Chau Yu and Lui Mei Yan showed that students in a class that uses the TGfU model need to be able to control themselves and possess a high degree of attention. Lui Mei Yan found that managing a class of younger students (primary one to four students, age level from 7 to 10) was challenging because they had low self-control. She stated:

It is hard to manage a classroom when implementing the TGfU model because of the verbal and physical interaction among students. Students are free to talk with one another, hence taking their focus away from the teacher. They move and run around. Sometimes they are even knocked down by others that they could injure. Sometimes I feel that the classroom is in chaos, and I cannot control the students effectively. Therefore, I will use the TGfU approach only with some of the senior primary school or secondary school students because most of them already have self-control.

Similarly, Ng Chau Yu believed the TGfU approach would not suit young students (primary one to four) because of their short attention span. She said:

Young students are very active and they cannot concentrate. Their attention is easily distracted by the environment or other things. However, based on my understanding and microteaching experience, to ensure that the game could be processed smoothly PE teachers must spend a few minutes to clarify the rules and tactics first. I cannot imagine students sitting quietly for several minutes to listen to their teachers’ talking.

The research results thus far show that TGfU has some strengths, such as its propensity to enhance students’ engagement, foster intellectual development and include students with different skill levels. This supports earlier works suggesting that TGfU increases cognitive and emotional engagement (Light, 2002), improve students’ creativity (Howarth, 2005), and provides equitable experience to students (Light, 2003; Light and Tan, 2006; Light and Butler, 2005). It is important to note that these strengths are consistent with the goals of the Hong Kong PE curriculum innovation of acquiring knowledge and developing generic skills. Thus, this study confirms that the TGfU approach is an effective way to help teachers achieve the requirement of the new PE curriculum. On the other hand, the results of the study show that the strengths of TGfU presented by pre-service teachers are related to cognitive and affective domains, such as fun and knowledge development, instead of the psychomotor domain. This indicates that Hong Kong pre-service PE teachers focus more attention on students’ knowledge and emotions rather than skills. This differs from the value orientation of in-service teachers in Hong Kong, which places a significantly high priority on developing performance proficiency in sports skill (Ha, 2001; Ha et al., 2007). The different value orientation between pre- and in-service teachers may result in their varying attitudes towards TGfU. To enhance both pre- and in-service teachers’ acceptance of TGfU, further study is needed to examine the interaction between pre- and in-service teachers and the impact of this interrelationship on the implementation of TGfU.
TGfU has certain limitations. For one, pre-service teachers have to spend more time preparing for the class. This is in line with Light and Butler’s (2005) study, which reported that implementing the TGfU model requires more preparation and adaptability for in-service teachers in the US because they must be knowledgeable about offensive and defensive strategies. However, it is notable that the emphasis on teachers’ class preparation is different between these two studies. The current study reported that pre-service teachers spend time obtaining such information as students’ sports skill, game experience and classroom discipline to ‘keep the class under control’. Additionally, in Rossi et al.’s (2007) study, in-service teachers suggest that TGfU does not fit young children because the skill and conceptual demands of the TGfU approach are too great for these children. This is consistent with the present study, which shows that some junior primary school students are not thought compatible with the TGfU model. However, different from Rossi et al.’s (2007) study, this study addresses students’ lack of the self-control and short attention span. As for the difference between the current study and previous literature, it is obvious that Hong Kong pre-service teachers focus their attention more on classroom discipline and students’ self-control in the TGfU class. There are three possible reasons for this peculiarity. First, compared with in-service teacher, pre-service teachers give more importance to classroom management, citing it often as the most important problem they face (Evertson and Weinstein, 2006). Second, teachers in Asian countries are more concerned about student discipline than those in western countries due to cultural differences (Shin and Koh, 2007). Third, the perception of management is different. A quiet and obedient class may be valued more in Asia than in western countries where free will and liberal values tend to frame discipline as more about safety and consideration for others than obedience.

Challenges and possible resolutions

Challenges

Pre-service teachers’ responses to the challenges they face upon learning about the TGfU approach fall under two main categories: (1) challenges in understanding the concept of TGfU and (2) challenges in implementing TGfU. Based on their personal experiences, pre-service teachers provided some possible solutions to these problems.

Challenges in the conceptual understanding

Two pre-service teachers admitted that, at first, they felt it was hard to comprehend the core idea of TGfU, that is, the constructivist nature of TGfU. Tsai Wai Hung felt that ‘the theory of constructivism, the concepts of student-centredness and problem solving are too abstract to be completely understood’. Both teachers related their confusion about the TGfU concept to their excessive exposure to the skill-based teaching approach.
Several pre-service teachers reported that understanding the relationship between game play and skills development was another challenge they encountered. They felt that fundamental skill was needed for students to play games. However, in the TGfU approach, students are typically introduced to playing the games before they are taught the skill. Wong Yu Shun described the tension he felt in understanding such a relationship this way:

I am confused with the concept of TGfU. I was taught that the TGfU approach is different from the skill-oriented approach because games are applied prior to the learning of skill. However, without the related skill, how could the students participate in the games?

Moreover, pre-service teachers’ confusion in understanding the TGfU approach was connected with the time allocation for games and skills. The same teacher added:

Honestly, I am not sure what the criteria for a standard TGfU class are. . . . My understanding is that the emphasis of game play and skill practice is different between the skill-oriented approach and the TGfU model. However, I wonder what the appropriate percentage of sports skill and games should be in a TGfU class. This feeling of uncertainty makes me doubt if I had understood and implemented the TGfU correctly.

**Challenges in the implementation of TGfU**

Interviews with the pre-service teachers involved in this study showed that the most difficult part of learning the TGfU approach was its implementation. Their responses indicated the difficulty in the creation of game forms and difficulty in the effective use of time.

Reflecting on their TGfU microteaching, a group of pre-service teachers felt it was important to create new and interesting games. Hence, they gave the following responses: ‘The games should be new and provide enjoyment to stimulate students’ learning interest’; ‘The games should relate with the objective of the class’; and ‘The game size, level of difficulty, and tactics emphasis must be considered’. Given these requirements, pre-service teachers felt it was difficult to create or modify a game to an appropriate level to bring out what they intend to achieve. Emphasizing the difficulty, Ho Hong Yau said:

When I conducted my TGfU microteaching, I felt the greatest challenge was designing the game. The game must bring enjoyment to the students. Otherwise, they will lose their motivation to participate. Additionally, the difficulty level of the game should be consistent with the students’ sports skill level. These factors required me to do much preparation prior to the class. For example, I had to search some relevant information and tried to know much more about the students’ characteristics including their age, skill level or class size, and discipline.
Another challenge for pre-service teachers in using the TGfU model is the effective use of time devoted to the lesson. A few pre-service teachers responded that they failed to implement the TGfU model because they had to spend extra time explaining the game rules and tactics in class, hence reducing the time intended for the activity. This can be attributed to any of the following reasons: ‘the complicated game rules and tactics’, ‘the limitation of students’ game knowledge and experience’ and ‘the teachers’ ability to clarify’. Similarly, Law Qun Yee pointed out:

During TGfU microteaching, I found that some pre-service teachers who used the traditional skill-based approach achieved better results than those who used the TGfU approach. Pre-service teachers who conduct TGfU class spent most of their time explaining the rules and demonstrating the games to the students. In addition, some students could not completely understand them. Some pre-service teachers had to stop the game while it took place just to make clarifications. Therefore, very limited time was left for the students’ activity and game play. This influenced the students’ learning negatively.

Possible resolutions

Given the challenges they encountered, pre-service teachers offered some possible solutions based on their personal experience. With regard to the challenges in the conceptual understanding, the teachers suggested that they themselves should ‘read some relevant information and practice on my own’, ‘attend a conference or workshop’, ‘interact with peers’ and ‘observe other teachers’ instruction with the TGfU approach’. For example, Wong Yee Ling revealed that the information from the internet and communicating with other teachers through the internet greatly helped her understand TGfU better. She said:

I like the TGfU approach, but I am confused with some of the concepts . . . In order to clarify these concepts, I surfed the internet for some information about TGfU and found adequate information. These pieces of information include some experts’ explanation of TGfU concepts, some teachers’ personal understanding of the TGfU model, and some videos of TGfU classes. Furthermore, I also communicated with the teachers from other places or other countries through the website or through MSN. I found that many other teachers have the same problems as I. We exchanged our own views and understanding of TGfU, and we recommended some books or materials to each other. These have been helpful for my conceptual understanding of the TGfU approach.

As regards the challenges in implementing the TGfU model, several pre-service teachers suggested ‘game modification’, ‘keeping the topic simple’, ‘choosing the content that I am knowledgeable about’, ‘understanding students cognitive and skill level more’ and ‘teaching one concept over multiple lessons’. Emphasizing the problem of game creation, Ho Hong Yau explained:
My classmates said that they found it difficult to create interesting games. I suggest that one should begin with content that he/she is most comfortable with and has knowledge. For example, I am good at soccer, so it is easy for me to figure out some soccer games and understand the relevant game rules and tactics.

A number of studies explored the challenges teachers encounter in understanding and implementing TGfU (Butler, 1996; Howarth, 2005; McNeill et al., 2004; Randall, 2008; Rossi et al., 2007; Wright et al., 2006). Among them, McNeill et al. (2004) showed that Singaporean pre-service teachers have difficulties in understanding the constructivist nature of the TGfU model. Moreover, the same teachers encountered great challenges in designing units of work, clarifying, selecting content, questioning and sustaining students’ interest in the implementation of TGfU. In line with McNeill’s et al. (2004) study, this study reveals the challenges Hong Kong pre-service teachers encounter in understanding the nature of the constructivist approach and implementing the TGfU model, including the creation of games (selecting content) and effective use of time (clarification of game rules or tactics). The high consistency of the research findings between these two studies is possibly linked to the similar culture and educational background between Singapore and Hong Kong. Both Singapore and Hong Kong began as British colonies, with a British legal and administrative system, and both feature a mixture of influences through the joining of eastern and western values brought about by British colonisation. Furthermore, in recent years, both Singapore and Hong Kong have initiated educational innovations that aim to create opportunities for students to engage in critical thinking and problem-solving and be less involved in rote memorization of material (CDC, 2002; CDC and HKEAA, 2007; Wright et al., 2006). Given this similar cultural and educational background, it is not surprising that pre-service teachers in these two different regions have the similar perceptions of TGfU.

**Future use of TGfU**

The responses of pre-service teachers on the use of the TGfU model in the future are classified into two: (1) pre-service teachers’ future use of TGfU in actual teaching and (2) future use of TGfU during teaching practicum. These classifications are based on the varying intentions of pre-service teachers to use the TGfU model between these two periods.

**Future use in actual teaching**

During the interview, when asked if they would use the TGfU model in their actual teaching practice, 16 of 20 pre-service teachers said that they would try it out because of the benefits TGfU has on student learning. Mak Yee Ling said he would implement the TGfU model in practice:

*TGfU is beneficial for students’ learning because it stimulates students’ interest and promotes their cognitive development. With such strengths, I think it is*
definitely worth implementing. I am all for it . . . After the school visit and communication with school teachers, I found that many school teachers in Hong Kong have a negative attitude towards the implementation of TGfU because they think it is impractical. I think they will change their attitude if I apply the model successfully.

In contrast, Li Lin Kai and Law Qun Yee expressed no interest in using the TGfU model in the field. Law Qun Yee related his unwillingness to implement TGfU to his ‘conservative teaching beliefs’ and ‘difficulty in making a change’, while Li Lin Kai discussed the barriers of schoolteachers’ heavy workload. He explained:

In fact, a PE teacher in Hong Kong has much work to do. He or she not only has to teach PE classes but also has to teach two or three academic subjects like Chinese language, English language, and Mathematics. Not only that, he/she has to coach sports teams as an additional duty, which is not the case with other teachers. This is time consuming and energy demanding for teachers. I think that with such a heavy workload, I will not have the energy to try out some new approaches in my class.

Future use in the teaching practicum

Despite pre-service teachers’ intentions to implement the TGfU model, five of the 16 pre-service teachers who intended to use it in their future school teaching insisted that traditional skill-based approach should be embraced during their subsequent teaching practice. Interview results indicate that these five pre-service teachers’ preference for traditional approach is linked with two issues: limited support from cooperating teachers (the schoolteachers providing supervision on the work of a pre-service teacher) and the short period of the practicum. Choi Yin Lap and Wong Yu Shun revealed that most of the schoolteachers including their cooperating teachers preferred traditional skill-based teaching approaches, hence greatly influencing their future implementation of the TGfU model during teaching practicum. Choi Yin Lap commented:

It is risky to use TGfU during the practicum. In the school visit this year, I found that most of the schoolteachers do not know anything about TGfU, and they all think it cannot work in actual practice. Their opinions are very important to us because cooperating teachers grade our teaching performance during the practicum. I would rather use the traditional approach because I don’t want to receive low marks from my cooperating teachers.

The other three pre-service teachers attributed their unwillingness to use the TGfU model to the short period of the practicum. Law Qun Yee revealed:

In fact, I will use TGfU only when I am familiar with the students. The problem is that the practicum lasts for only three weeks. It will take one or two weeks for
me to know something about students’ characteristics like their game experience and skill level, so there is little time left to apply TGfU. I think that the TGfU can be used if the practicum lasts for seven to eight weeks.

Many studies have shown that many in-service teachers do not implement the TGfU approach in their classes (Butler, 2005; Evans and Clarke, 1988; Kirk and Claxton, 1999; Rossi et al., 2007). Similarly, the related local findings reveal that most in-service teachers in Hong Kong adopt the skill-based approach in teaching their students during game lessons (Liu, 1997; Cruz, 2004). In contrast to these research findings, most of the pre-service teachers involved in the present study responded that they intended to use TGfU when they begin teaching in a real school setting. The explanation may be related to the pre-service teachers’ willingness to innovate and try out new approaches (Butler, 2005). In-service teachers are more exposed to traditional approaches than pre-service teachers and these approaches become a barrier for adopting TGfU.

Conclusion and implications

Based on the constructivism (Fosnot, 1993; Piaget, 1970), pre-service teachers’ perception of TGfU was discussed in three dimensions: its strengths and limitations, challenges and possible resolution, and future use.

The research results indicate that, although there are challenges in adapting TGfU such as the amount of preparation needed and the feeling that TGfU does not suit very young children, pre-service teachers believed that TGfU is beneficial for students because of its propensity to enhance students’ engagement, stimulate their thinking and include different students. This implies that most of the pre-service teachers have positive attitude towards TGfU. Furthermore, the strength of the TGfU model is consistent with the goals of the PE curriculum innovation of acquiring knowledge and developing generic skills (i.e. communication, cooperation, critical thinking, creativity and problem-solving). Therefore, this study confirms that the TGfU approach is an effective way to help teachers achieve the requirement of the new PE curriculum.

The research results show that pre-service teachers encounter challenges in understanding and implementing TGfU because it is in conflict with their prior experience and knowledge. Therefore, the major content and the ‘instructional strategies’ of the TGfU professional development programme should be adjusted to help pre-service teachers overcome these challenges. On the one hand, apart from the theoretical knowledge of TGfU, a variety of fundamental tactical knowledge and the method of creating and modifying games, and more demonstration of TGfU teaching are recommended to be covered in the programme. On the other hand, pre-service teachers should be trained specifically to apply theoretical knowledge in the practice of their skills (Armour and Yelling, 2007; Fullan and Hargreaves, 1996). More peer teaching and school teaching should be provided to pre-service teachers. Teacher
educators of TGfU programmes should also provide guidance for the successful implementation of the TGfU approach and help pre-service teachers by discussing the reasons behind failed experience.

According to the research findings, most pre-service teachers fully intend to use TGfU in their future school teaching. However, some of them will not use TGfU during their teaching practicum due to their traditional beliefs, the lack of support from cooperating teachers and the short period of teaching practicum. Given these, more attention must be given to presenting an effective TGfU programme to both pre-service and in-service teachers. This implies that improving pre-service professional development alone will be far from adequate. Currently, in Hong Kong, the TGfU programme for in-service teachers is not complete (Liu, 2004). More TGfU-related training programmes should be provided to in-service teachers to help develop a stronger TGfU culture. Furthermore, it is recommended that the professional bond between pre- and in-service teachers be cultivated. Previous studies reveal that the collaboration between pre- and in-service teachers is necessary because pre-service teachers’ learning needs the support of in-service teachers, while in-service teachers should also be exposed to new teaching ideas and develop their knowledge by learning from pre-service teachers (Burbank and Kauchak, 2003). However, the collaboration work culture between pre- and in-service teachers is still in its infancy (Ha et al., 2004). Joint efforts should be initiated and maintained by the government, schools and universities to support such an interactive relationship.

References


**Résumé**

Perception des enseignants stagiaires de la méthode d’enseignement des jeux comme vecteur de compréhension : étude de cas à Hong Kong

Cette étude se propose d’analyser la perception des enseignants d’éducation physique (EP) stagiaires de Hong Kong à propos de la méthode d’enseignement des jeux comme vecteur de compréhension (Teaching Games for Understanding ; TGfU). En adoptant une approche qualitative, 20 enseignants stagiaires d’EP (F = 8, M = 12) ont été recrutés pour répondre à des interviews semi-structurées. La plupart des enseignants stagiaires ont rapporté que la méthode TGfU est bénéfique pour les élèves car elle tend à augmenter leur engagement, à stimuler leur réflexion et est adaptée pour des élèves possédant des niveaux d’habileté motrice variés. Cependant, des difficultés dans la compréhension de la nature et des procédés de mises en œuvre de la méthode TGfU ont été rencontrées. Les résultats indiquent que la majorité des enseignants stagiaires projettent d’utiliser la méthode TGfU à l’avenir, bien qu’une poignée d’entre eux préfèrent utiliser dans leurs cours l’approche par l’apprentissage des habiletés techniques considérant ne pas être suffisamment soutenus par leurs tuteurs et ne pas bénéficier d’assez de temps d’enseignement pour pouvoir mettre en place la méthode TGfU. Des suggestions visant à augmenter le développement de la méthode TGfU et les collaborations entre enseignants stagiaires et tuteurs sont proposées.
Resumen

La percepción de los profesores en preservicio respecto a la enseñanza a través de juegos cognitivos: una perspectiva desde Hong-Kong

Este estudio pretende examinar la percepción de los profesores de Educación Física (PE) respecto a la Enseñanza a través de Juegos Cognitivos (TGfU) en Hong Kong. A través de una aproximación cualitativa, se solicitó a 20 profesores en ‘pre servicio’ (Mujeres = 8, Hombres = 12) para realizar entrevistas individuales semi-estructuradas. La mayoría de los profesores en ‘pre servicio’ respondieron que los TGfU son beneficiosos a causa de su tendencia a aumentar el compromiso de los alumnos, los estimulan para pensar y permiten la inclusión de alumnos con niveles de habilidad variables. No obstante, se encontraron dificultades para comprender la naturaleza de los TGfU y desarrollarlos. Los resultados indicaban que la mayoría de los profesores en ‘pre servicio’ están dispuestos a utilizar los TGfU en el futuro, mientras que otros prefieren utilizar en sus prácticas una aproximación basada en la tarea, debido a la falta de apoyo de profesores colaboradores y a un corto tiempo de práctica docente. Se realizaron sugerencias para mejorar el desarrollo profesional del programa de los TGfU, así como la colaboración entre docentes en prácticas y docentes en servicio.

Zusammenfassung

Die Wahrnehmung der Methode ’Teaching Games for Understanding’ durch Lehramts-Anwärter/innen: eine Studie in Hong Kong


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