Perceptions of Hong Kong Physical Education Teachers on Teaching Games for Understanding: Implications for Continuing Professional Development

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The study examined the perceptions of physical education (PE) teachers in Hong Kong and the applications of Teaching Games for Understanding (TGfU) in their respective schools. Using a qualitative approach, this study invited 20 PE teachers for individual semi-structured interviews. Deductive data analysis was utilized to identify unique themes in the broad aspects of teacher perception. Based on concepts adopted from cognitive constructivism and social constructivism, we examined teachers' views on

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adopting TGfU. Teachers stated that TGfU provided group discussion and communication opportunities among students. However, they are not confident in modifying equipment, space and rules to make TGfU more meaningful due to limited contact time with students and large class sizes. In conclusion, professional development of TGfU should emphasize more demonstrations of TGfU teaching methods and experience sharing among teachers.

Keywords: perception; TGfU; interview

In the last few decades, studies began to show that the traditional technique-based approach does not generate the desired result because of its limitations — namely, its focus on specific motor responses without considering the contextual nature of games; its emphasis on skill performance, limited cognitive learning components such as problem solving and creativity for empowering students' physical education learning experience (Bunker & Thorpe, 1982; Díaz-Cueto, Hernández-Álvarez, & Castejón, 2010). As a consequence, an orientation in sports with a constructivist approach to learning, known as the Teaching Games for Understanding (TGfU) model, was developed (Bunker & Thorpe, 1982; Griffin & Butler, 2005; Kirk & MacPhail, 2002; Light & Fawns, 2003). This teaching approach represents a shift from the teacher-centered and skills-based method to a student-centered approach, linking tactics, fun, and enjoyment in the context of games. Physical Education (PE) teachers have adopted TGfU in the context of PE settings and sport coaching (Allison & Thorpe, 1997; Griffin & Butler, 2005; McNeill et al., 2004; Wang & Ha, 2009, 2012a, 2012b, 2013a; Wright, McNeill, Fry, Tan, et al., 2006).

Several studies investigated the response of pre-service PE teachers in the United States, Australia, Singapore, and Hong Kong to the TGfU model. The findings of these studies suggest that most pre-service teachers show a favorable response to TGfU (Gubacs-Collins, 2007; Light, 2002, 2003; Light & Tan, 2006; McNeill et al.,

2004). However, several pre-service teachers expressed an unwillingness to implement TGfU in class because they considered the teaching process as being fraught with difficulties and barriers, such as contextual constraints (e.g., class size, space, class time), misaligned assessment tools, low cognitive and skill levels of students, difficulties in classroom management, and their own limited game knowledge (McNeill et al., 2004; Wright, McNeill, & Fry, 2009; Wright, McNeill, Fry, Tan, et al., 2006).

Despite the differences in educational backgrounds and experiences between pre-service and in-service teachers already in the field, similar research results have also been reported with in-service teachers in several studies (Díaz-Cueto et al., 2010; Light & Butler, 2005; Rossi, Fry, McNeill, & Tan, 2007). According to these study results, in-service teachers advocated for TGfU because it provided a more equitable experience of sports and fun for all students compared with other traditional approaches (Light & Butler, 2005; Rossi et al., 2007). However, PE teachers experienced difficulties in the planning and implementation of TGfU (e.g., inadequate game knowledge, inability to modify games, contextual constraints, and conflict with the current learning assessment system), thereby leading to low confidence in using the approach (Díaz-Cueto et al., 2010). Current literature on the response of pre-service and in-service teachers to TGfU indicates that most of the studies focus on pre-service teachers, whereas research on in-service PE teachers remains limited (Díaz-Cueto et al., 2010). The present study adds to this body of knowledge by investigating the perception of TGfU from the perspective of in-service teachers.

In line with the global trend of PE, the Hong Kong government has initiated a series of curriculum reforms over the past decade. First, PE was introduced as one of the key learning areas of school curricula (Curriculum Development Council [CDC], 2002). Second, the emphasis of a new PE curriculum was placed on the promotion of students' active learning of generic skills, such as problem solving, collaboration, communication, critical thinking and creativity, through physical activity (CDC, 2002; CDC & Hong Kong Examinations and Assessment Authority

[HKEAA], 2007). Consequently, the goal of PE teaching shifted from direct teaching to facilitative teaching (CDC, 2002; CDC & HKEAA, 2007), which emphasizes students' interest and needs rather than the subject matter itself.

TGfU (Bunker & Thorpe, 1982) was introduced in Hong Kong in the late 1990s as a constructivist approach (Wang & Ha, 2009, 2012a, 2013b). Researchers have examined their perceptions of TGfU (Cruz, 2004; Liu, 1997, 2001, 2004). The results report that many in-service teachers have shown concern for this new approach because TGfU offers more opportunities for students to participate and improve their motivation to learn (Liu, 2001, 2004). However, most in-service teachers continue to use the traditional skill-oriented approach in PE classes (Cruz, 2004; Liu, 1997). Liu (1997) demonstrated that 90% of secondary school teachers in Hong Kong adopted the skill-based approach and exhibited no tendency to modify this approach. Despite these studies on the perception and practice of TGfU among teachers, very few studies explained these perceptions based on a theory. The aim of the present study was to examine the perceptions of Hong Kong in-service PE teachers on TGfU based on the theory of constructivism.

Theoretical Framework: Cognitive and Social Constructivism

The theoretical base for this study follows a constructivist perspective. Constructivism is a theory on knowledge development and learning process. This theory describes both what "knowing" is and how one "comes to know" (Fosnot, 2005). Learners construct understanding and knowledge based on their experiences, reflections, interactions, and discussions. Within the broad theoretical framework, constructivist literature identifies two strands of constructivism, namely cognitive and social. The former is associated with the work of Piaget (1971) and the latter is related to the ideas of Vygotsky (1978).

Cognitive constructivism explains how learners adapt and refine knowledge as individuals (Piaget, 1971). Accordingly, individuals

construct new knowledge from their experiences through assimilation and accommodation. Assimilation occurs when the new experience of an individual aligns with his or her existing internal representation of the world. The learner will then assimilate the new experience into an existing framework. Meanwhile, accommodation is a reflective process in which individuals transform their cognitive structures in the face of experiences that differ from their existing understanding. Therefore, new experiences at times contradict with the present understanding, which makes comprehension insufficient and perturbing, and thus, disequilibrating the structure and causing people to accommodate (Fosnot, 1993). This process indicates that knowledge is created by individuals, rather than knowledge being an already existing object in the physical world (von Glaserfeld, 1996).

In contrast to cognitive constructivism, social constructivism views knowledge as a cultural product (Vygotsky, 1978). From this theoretical perspective, knowledge is shaped by micro- and macro-cultural influences and has evolved through increasing participation within different communities (Cole, 1990). Social constructivism interprets the learning processes by using three concepts: (a) zone of proximal development (ZPD), (b) intersubjectivity, and (c) enculturation (Lave & Wenger, 1991; Vygotsky, 1978). Vygotsky (1978) introduced ZPD, which is the notion that developing mental functions must be fostered and assessed through collaborative activities in which learners participate in constructive tasks or problem-solving activities with the assistance of more knowledgeable individuals. This concept addresses the contribution of peers to individual learning in the context of social engagement. The theory emphasizes the learning process in which knowledge is constructed through social interactions (Cobb, 2005). Intersubjectivity refers to the mutual understanding achieved between people through effective communication. Meanwhile, enculturation calls attention to the profound roles that the practices of particular cultures and of the same cultural group play in development over time. In social constructivism, learning occurs through the process of intersubjectivity in the enculturalized ZPD. That is, learning occurs

through communication with peers and experts or seniors in a context related to real-life tasks.

Method

Participants and Procedures

Participants were purposefully selected based on the research results of an initial study on teaching perspective of PE teachers in Hong Kong. In that initial study, participants were recruited during a summer school program organized by the Education Bureau of the Hong Kong Special Administrative Region government. The participants of the study is composed of 214 teachers and administrators (100 males, 111 females, and 3 who did not report) from Hong Kong. Participants had varied teaching experiences. The Teaching Perspective Inventory (TPI) (Pratt, Collins, & Selinger, 2001) was used to measure the teaching perspectives of the PE teachers. The TPI is an online instrument comprised of 45 items (www.teachingperspectives.com). These items were grouped into 3 sets of 15 items, which corresponded to teaching beliefs, intentions, and actions of teachers. In each set of questions, three questions are associated with each of the five teaching perspectives. Each teaching perspective was measured by summing across three items for belief, intention, or action for each of the five different perspectives. Differential endorsement of individual items yielded the five teaching perspectives for each teacher. Once all five perspective scores were calculated, each score was compared with the mean of all five perspectives to determine a "dominant perspective" for each teacher.

The five teaching perspectives include transmission, apprenticeship, developmental, nurturing, and social reform. The transmission perspective prioritizes the mastery of the subject matter content and emphasizes that effective teaching requires a substantial commitment to the content or subject matter. The apprenticeship perspective directly associates with the real setting of the application. This perspective claims learning is facilitated when students work on authentic tasks in real settings of

application or practice. The developmental perspective, which embodies the constructivist viewpoint, emphasizes that effective teaching must be planned and conducted "from the learner's point of view." The nurturing perspective requires long-term and persistent effort to achieve what comes from the heart and the mind, and promotes a caring and supportive environment that balances challenge and support to the achievements of students. Finally, the social reform perspective views that the object of teaching is collective rather than individualistic. The findings of the initial study indicated that teachers in Hong Kong have relatively low developmental perspective scores. A small proportion of teachers had developmental as their dominant perspective.

Following data collection and preliminary analyses, an extreme case sampling method (emphasizing contrasting teacher views) based on questionnaire data was used to recruit participants for this study. According to the developmental perspective, the result represents the views of teachers on constructivist teaching. Therefore, the developmental perspective of teachers may be consistent with their perception of the TGfU model. To include teachers who may have different perceptions of TGfU, we invited teachers who reported the highest ($n = 10$) and lowest ($n = 10$) developmental scores to take part in the semi-structured interviews (Merriam, 1998).

Twenty PE teachers agreed to participate in the current study. Among the 20 participants, 8 PE teachers taught in primary schools, while 12 PE teachers taught in secondary schools. In terms of professional degree holders, 10 teachers had a Bachelor's degree in PE and Sports Pedagogy, and 2 possessed a Master's degree. The ages of the 10 male and 10 female participants ranged from 23 to 57 years. The teaching experience of the participants substantially varied from one year to 34 years. Among the 20 teachers, 13 teachers have attended some coursework or workshops in TGfU. Furthermore, nine teachers have experienced teaching PE lessons using TGfU.

Participants for the interviews were contacted through telephone or email to set the interview date and venue. The office of the researcher was selected as the venue for the interview. Each interview began with

a discussion on the purpose of the study and an explanation of the informed consent. The interview protocol was employed as the instrument for the interview in Cantonese. All interviews were recorded on audiotape. After each interview, the researcher immediately transcribed the interview data to maintain the rigor and validity of the research and guarantee the quality of data.

Interview Protocol

Semi-structured interviews were conducted to ask (a) teachers' perceptions about TGfU teaching approach, (b) their views and applications of TGfU, and (c) their suggestions on TGfU teachers' continuing professional development (Table 1). These questions were framed around the concepts of cognitive constructivism — individual knowledge and prior experience in TGfU — and social constructivism (Vygotsky, 1978). The latter consists of: (a) ZPD — collaboration with more capable peers; (b) intersubjectivity — mutual understanding achieved between people through effective communication; and (c) enculturation — the process whereby the currently established culture enables an individual to learn the accepted norms and values (Fosnot, 2005; Lave & Wenger, 1991; Vygotsky, 1978). To ensure that questions were appropriate and presented in a way that would elicit detailed information from interviewees, the interview protocol was reviewed by an expert panel, including the principal investigator and a co-investigator of the study. Interviews were conducted in a flexible manner to provide an opportunity for teachers to discuss issues they felt were relevant.

Data Analyses

In terms of qualitative data, recorded interviews were transcribed by the principal investigator and analyzed using the NVivo 8 software package. Data were analyzed using deductive content analysis (Patton, 2002). Following Patton (2002), data were coded based on emerging themes

Table 1: Interview Protocol Used in This Study

Key concepts		Questions
Teachers' knowledge and game / teaching experience	1.	Have you heard about an alternative teaching approach named "Teaching Games for Understanding" (TGfU)?
	2.	If yes, what is / are your personal opinion(s) on TGfU?
	3.	Can you describe the individual factors (e.g., game experience, previous teaching experience) that might influence your views toward TGfU? How do these factors influence your perception of TGfU?
ZPD — collaboration with more capable peers	4.	Have you and your colleagues ever adopted the TGfU approach to teach team sports in your classes?
	5.	Have you ever attended any TGfU professional development program before? Do you think the program is effective to prepare you to implement TGfU effectively in your classes?
Intersubjectivity — mutual understanding achieved between people through communication	6.	How much do you know about the strength and limitation of TGfU model compared with the skill-based teaching approach?
	7.	When using TGfU in your classes, what challenges and benefits do you describe to other teachers?
Enculturation — established culture enables an individual to learn the accepted norms and values	8.	Can you describe the social factors (e.g., PE culture, policy, colleagues) that influence your attitude toward TGfU? How do these factors influence your perception of TGfU?
	9.	Do you think there is a need for you to attend a TGfU program? What are your suggestions to make the TGfU program more effective in promoting teachers' implementation of TGfU?

that best represent that particular segment of data. First, two researchers independently identified raw data themes for each participant. Raw data themes were composed of the summary of the passage and a number of key words, phrases, or sentences in the interview data that convey a specific concept or idea. Two researchers discussed their respective raw data themes until consensus was achieved. Then, the researcher identified common themes or patterns shaped by cross-case raw data analysis, using deductive content analysis. Finally, the summary of the raw data, first-order themes, general dimensions, and categories for participants were combined to form a hierarchical thematic structure.

The trustworthiness for this study was established using three strategies. Peer debriefing (Creswell, 2007) was used when the principal researcher discussed monthly with the other researcher who is an experienced qualitative researcher. Throughout data collection and analysis, data, charts, matrices, memos, and the thoughts and analyses of the researchers were shared with the peer debriefer, whose role was to comment on the logical nature of the interpretations, identification of all possible categories, and information regarding potential researcher bias. Based on Merriam (1998), member checking was employed in the current study to ensure the validity of interview transcript. Data and tentative interpretations were returned to all the participants to confirm, correct, or expand any information presented. A final analyst triangulation (Patton, 2002) was employed to test the reliability of the data analysis. Two researchers who were knowledgeable about TGfU coded the data by category. When differences were observed, they discussed together until consensus was reached.

Results

Twenty participating teachers were invited for semi-structured interviews. Interview data were analyzed and presented based on concepts adopted from cognitive constructivism and social constructivism.

Cognitive Constructivism: Prior Knowledge and Experience With TGfU

By adopting the perspective of cognitive constructivism, we analyzed the knowledge of teachers by including their assimilation and accommodation strategies in relation to the application of TGfU in their teaching. Teachers indicated that TGfU, unlike traditional skill-based teaching, required more in-depth group discussion and communication opportunities among students before moving to the actual execution. These teaching approaches improved the generic skills of students, such as cooperation and problem solving, and assisted in meeting the new

direction of school PE (CDC & HKEAA, 2007). However, the interviews indicated that most teachers were not confident in guiding their students to talk and to discuss before and during the game. In their previous traditional teaching and learning settings, teachers usually focused their time on skill teaching and practicing without spending much time to guide students to think and re-think strategies and tactics for games or competitions.

Teachers further explained their perceptions of TGfU, saying that teachers' subject matter knowledge (or declarative knowledge) and game experiences in team sports (basketball, football, etc.) influence the quality and depth of lessons. One teacher stated:

> I am not good at team sports and I have no experience in playing games. Therefore, I felt using TGfU would be difficult because I do not know these game rules and game tactics.

In addition, teachers' pedagogical skills such as ability to modify equipment, space, and rules are important too. Without appropriate declarative and pedagogical knowledge about TGfU, teachers are not confident in adopting this approach. Furthermore, if teachers' beliefs in adopting TGfU is not clear, or if they are not willing to shift to the new initiative advocated by the government (CDC, 2002; CDC & HKEAA, 2007), they will likely under-employ TGfU. One male teacher said:

> Teacher's teaching perspectives determine the fate of TGfU. When a teacher sticks to traditional teaching PE method and generated a deep-rooted view/strategy to teach skill rather than providing students opportunities to think, to communicate and to resolve the game problem, TGfU would become difficult to implement.

The scope and depth of prior knowledge and experience of teachers in team sports, such as basketball, soccer, handball, and volleyball, resulted in highly determined, confident, and competent use of TGfU in their PE teaching. Some teachers of this group claimed that despite their confidence of teaching swimming, athletics, gymnastics, and other

physical fitness games, they are not familiar with the teaching approaches of TGfU. This finding provided evidence for teachers and teacher educators to reflect on the training modes and the content of pre-service programs, and the extent to which professionals need to spend to upgrade their quality of teaching through additional on-the-job training courses.

Social Constructivism: ZPD

The majority of the teachers reported that they *sometimes* used TGfU in their teaching. Most of these teachers said Hong Kong schools also require PE teachers to teach other academic subjects, and therefore teachers do not have quality time to prepare for TGfU. Several teachers explained that the decision to adhere to TGfU or not was usually determined by other colleagues. In particular, if the PE panel head encourages or discourages them to attempt this initiative, they will simply follow accordingly. Overall, teachers reflected they do not have many opportunities to learn new skills for TGfU within or outside the school. Almost all teachers agreed that they would like to learn more about both theory and practice of TGfU from other sources. For instance, a teacher commented:

> My colleagues provided me with many suggestions. Some of them used TGfU in their classes and had rich TGfU teaching experience. They taught me the way to modify games and how to manage the class. I felt I learned much from them.

When asked if they have attended TGfU programs and learned from other peers, the majority of teachers said they have attended a course from an educational institution or from a summer school program organized by the government. Inadvertently, they found the information either too shallow or too theoretical. These failed to enhance their knowledge and skill in implementing the idea. They hoped for more practical sessions facilitated by teachers who could share ideas based on their experiences. Teachers believe that collaborative learning can

enhance their self-confidence to apply TGfU. All interviewed teachers emphasized that they would enjoy watching a real game demonstration in a workshop. In their experience, however, the demonstrations of this nature are limited.

Most teachers reflected that they used TGfU because they received more support from their panel head. One teacher said:

> Support from school and peers are the key factor to support new educational initiatives. I personally welcome new ideas in teaching but I also have to obtain my school head's consent to include new teaching methods in my classes. I had to spend time to communicate the idea with my PE panel head. In reality, it is difficult to use this method for all students because their skills are not good enough.

Social Constructivism: Intersubjectivity

To obtain teachers' views on the strengths of TGfU, we asked teachers their understanding of this approach and the skill-based approach. Teachers agreed that TGfU is a student-oriented approach that can create more opportunities for students to think, which in turn enhance their creativity and problem-solving skills under a fun learning environment. One teacher said:

> I support the TGfU teaching because it stimulates students to think by asking them questions. Furthermore, they have to independently confront some problems and make decisions to resolve problems alone in games. This approach also improves their problem-solving ability.

In terms of the limitations of TGfU, teachers from both groups felt that limited contact time for PE (50 to 70 minutes per week) and large class sizes (35 to 45 students) led to students' failure in understanding what to do during the games. One teacher commented:

> Although I modified games, I still felt that understanding the game tactics was difficult for students. It took me a substantial amount [of] time to explain tactics to them. However, I found the time left for their

practice was very limited. I think more class time is more appropriate for game teaching.

Teachers emphasized that the strengths of TGfU are enhanced cooperation, communication, and reflectivity among students during classes. For instance, one teacher mentioned the improvement of student communication and cooperation and said:

In games, students have to cooperate with other students. Therefore, this approach improved students' abilities to cooperate with other students.

Another teacher addressed student reflectivity and commented:

Teachers always asked students some questions after the games, which stimulated the students to reflect on what they have learned in the class.

In terms of challenges related to TGfU, teachers were concerned most about safety of students. They described that when more students are involved in a game, there will be a higher chance of injury. One teacher said:

In games, students always run. The possibility of students to bump each other is high. I am often afraid that they would be injured.

In addition, they are not optimistic about students' involvement in their groups. Western students may be appreciative of this teaching and learning approach but Chinese students are passive and do not take the initiative in most cases.

Social Constructivism: Enculturation

We invited teachers to describe social factors influencing their perceptions on the applicability of TGfU. Teachers from both groups responded that traditional direct instruction and assessment methods for PE are determining factors in the decision whether to implement TGfU or not. Although generic skills are specified and recommended by the government, schools and teachers have the autonomy to choose the

way they teach and assess their students. In addition, most principals'
attitudes toward new educational initiatives remain conservative, making
the changes more difficult to implement. Most teachers agreed that
supporting a new initiative in PE will require considerable amount of
time and resources. Also, other subjects are placed at a higher priority
to attract additional resources for changes in Hong Kong. One teacher
responded that:

> Whenever we tried new teaching contents or approaches, we have to
> seek for the principal's support. Consensus among colleagues is also
> crucial. It is not just a matter of resources; collective wisdom and effort
> are also required for new initiatives.

Unlike schools in the West, Hong Kong PE teaching emphasizes
standard examinations (objective skill test) and drill practice during PE
lessons. While TGfU stresses the nurturance of students' thinking and
communication skills, certain teachers felt that they lacked confidence
in teaching and assessing generic skills for students. For instance, one
teacher stated:

> Students in Hong Kong are taught with traditional skill-based teaching
> model in PE classes. They are used to following teacher instruction and
> passively accepting what they have learned. I am afraid that they would
> dislike the TGfU teaching approach which requires more active thinking
> and participation.

In fact, developing generic skills for students as recommended by
the Education Bureau (CDC, 2002) is merely lip service. Continuous
professional development that can promote student-centered content
as well as teaching and assessment methods, such as TGfU, remains
lacking in Hong Kong.

We asked teachers for their collective views on an ideal TGfU
program from teachers' perspective. Most of the participating teachers
requested that more demonstrations should be provided (i.e., "should
include both theory and demonstration," "watch demonstrations in the
morning and practical time in the afternoon," "demonstrations from PE
teachers," and "should include practical time and teaching manuals

about TGfU"). These descriptions highlighted the insufficiency of practical sections of the current TGfU program offered. Without practical experiences in using TGfU, teachers do not feel confident in using the approach. Peer-teaching during the workshop is strongly required. For example, one teacher stated that "the program should include sharing from teachers who used TGfU." This finding implies that collaboration among different groups of teachers is urgent and necessary.

Conclusion

Based on our qualitative interviews, numerous conclusions could be drawn. First, teachers' prior game knowledge and game experience is important for their learning and teaching of TGfU. Second, teachers felt that more practical professional development programs of TGfU should be provided and in ways which exemplify the collaborative learning activities of TGfU itself. Third, many teachers remain unconvinced that TGfU provides any particular advantages to themselves or their learners. Examples, demonstrations, success stories and brief newsletter write-ups may provide needed evidence. Fourth, students learn better in cooperative environments; however, their learning is inhibited by limited contact time, big class size, and inability to practice and enjoy communication. Also, some social factors influence teacher perception on teaching such as traditional direct instruction and assessment methods and the principal's attitude toward new educational initiative. Finally, for TGfU to achieve major visibility and support in the Hong Kong instructional system, it requires senior administrators to endorse and promote its benefits. Principals who are hesitant or resistant must come to understand that a new philosophy of instructional effectiveness requires students to participate, question, challenge, reason differently, co-learn, talk, play, engage, and "figure it out." Passive, silent learning is being rapidly overtaken by active, experiential, and self-constructed learning of approved curriculum materials.

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