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# An Integrated Physical Education Model

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## Abstract

*This paper focuses on an Integrated Physical Education Model that links the cyclical model of experiential learning (Kolb, 1971, 1979), the Complete 4MAT System (McCarthy, 1980), and Teaching Games for Understanding (Bunker & Thorpe, 1982). Understanding the similarities between experiential learning and a games-based approach to teaching games may help physical educators to design and to facilitate more beneficial lessons for their students. Key outcomes of successful physical education are students that have the ability to make successful decisions on the field and have awareness of both technical and tactical aspects of games. This discussion of an integrated approach involves playing games, emphasises active involvement, and encourages student decision-making.*

## Introduction

For over two decades, writers and practitioners within education have been arguing for the merits of experiential learning (Kolb, 1984; McCarthy, 1980) and teaching physical education through focusing on the game itself (Bunker & Thorpe, 1982). Although the development of thought with regards to experiential learning has paralleled that of the teaching of games, no attempt has been made to articulate the similarities between the models. Through drawing similarities between experiential learning and the teaching of games, physical educators may develop new insights into how best to structure their lessons and teach sport.

## Teaching Games for Understanding

Teaching Games for Understanding (TGfU) is a cyclical approach (see Figure 1), which places skill learning within its game context and allows students to see relevance of the skills to game situations, in order to gain an understanding of how to play the game (Bunker & Thorpe, 1982). This approach is in contrast to traditional linear approaches, which focus on technical development before applying these techniques to a game situation (Statt, Plummer, & Marinelli, 2001). With TGfU, students develop tactical awareness and decision making skills, within modified game situations. Performance in these games involves both conscious and unconscious technique selection, cue perception, and skill development (Kirk & McPhail, 2002). Despite the merits of discussing technique versus tactical approaches, it is a simplification of the physical education process, which is multifaceted (GrÈhaigne & Godbout, 1997; Holt, Strean, & Bengoechea, 2002; Light, 2003; Rink, 1998). In this paper, it is proposed that the TGfU approach may be understood and integrated within a framework of experiential learning. This discussion of an integrated approach involves playing games, but primarily emphasises active involvement and student decision-making (Coakley, 2001).
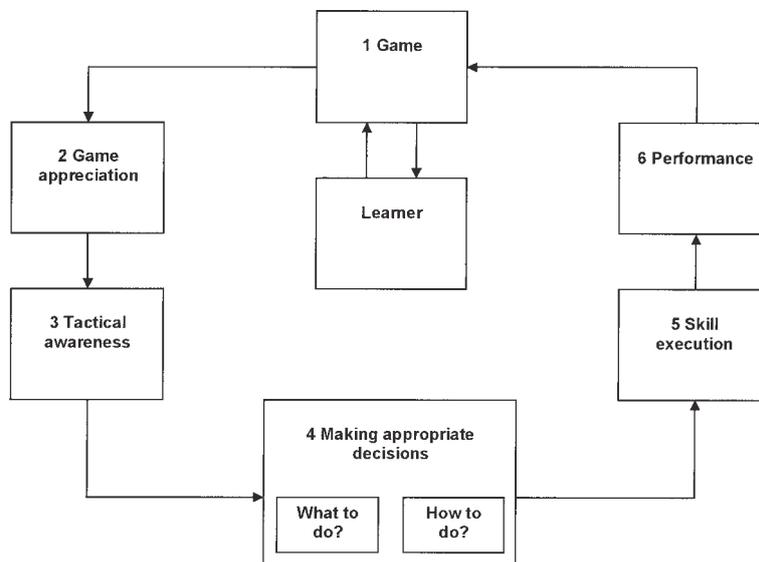
*Figure 1.*



*Figure1.* Model for the Teaching of Games (Bunker & Thorpe, 1982)

## Experiential Learning

Experiential learning is characterised by the total involvement of individuals (physically, intellectually, emotionally), including their prior life experiences, and their reflection upon the learning experience (Andresen, Boud, & Cohen, 1995). The educational process may be understood as a cycle (Kolb, 1984) and incorporates the learning experience, reflection on that experience, developing knowledge from the drawing of conclusions about the experience, and the application of this knowledge to new situations. Through the constant repetition of this cycle, experiential learning becomes a continuous process of transforming and creating knowledge, based on experience that involves interaction between the person and the environment.

A key component of Kolb's (1979) model is reflection. Dewey (1916/1965) defined reflection as "the intentional endeavour to discover specific connections between something which we do and the consequences which result, so the two become continuous" (p. 151). The reflection process turns the experience into experiential education (Joplin, 1981). The quality of reflection is dependent on the time available and the context within which it occurs (Eraut, 1995). In some circumstances, it may take time for the significance of an experience to become clear (Roberts, 2002). Moon (2000) suggested the following sequential stages in the process of learning from experience: noticing, making sense, making meaning, working with meaning, and, in some cases, transformative learning. This sequence is developed within the TGfU approach, where the game experience leads to an appreciation and awareness of games situations, leading to transfer into improved skills and game performance.

## The Complete 4MAT Model

McCarthy's (1980) circular 4MAT learning model (see Figure 2) links individual learning styles with an experiential approach. Learning styles are individuals' major characteristic learning stimuli (Dunn & Griggs, 2000). For example, some students prefer visual stimuli (e.g., a diagram of a tactical play). In McCarthy's model, students' learning preferences are recognised within four basic components, involving sensing or feeling, analyzing or observing, thinking through concepts, and doing. Moving clockwise from the top of the model, the progression incorporates all four learning styles and a balance of both left and right brain processing, for example, a combination of logical verbal tasks and intuitive non-verbal activities. McCarthy's model is suited to physical education lesson development. Its circular sequence may be understood within the context of a lesson (Statt, Plummer, & Marinelli, 2001).

In the first quadrant, the student's interest is captured through hands-on experiences. The second quadrant involves breaking down the concept into steps, involving questioning, and providing explanation and demonstration. The third quadrant requires either non-pressured practice and/or increasing opposition pressure. The role of the teacher is now that of a facilitator. The last quadrant allows students to experiment at game intensity (Statt, Plummer, & Marinelli, 2001). This model offers physical educators a means to optimise their instruction methods, because students have the opportunity to be taught in their preferred learning style, as well as understanding other learning styles (McCarthy, 1996; Statt, Plummer, & Marinelli, 2001).

For physical educators, the development of an effective approach to teaching athletes becomes more complex when not only elements of the game are considered, but also differences in individual athletes' learning styles and sensory modes (Brunner & Hill, 1992; Dunn & Griggs, 2000). Playing games favours kinaesthetic or experiential approaches to teaching and learning, but it should be recognised that learners with visual preferences may respond better to instructions being drawn in pin figures or for the learners to see themselves on a video play back. Similarly, a learner with an auditory preference may respond better to keywords when learning a specific skill (Hannaford, 1995; Prashnig, 1996, 1998).
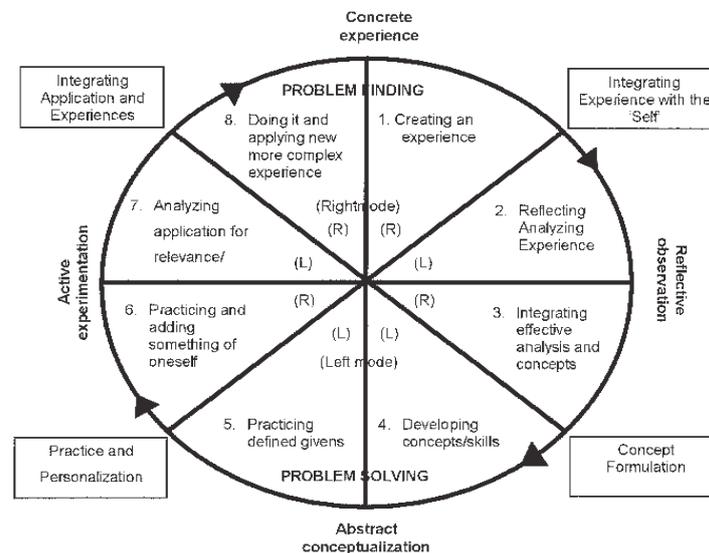
*Figure 2.*



*Figure 2.* The Complete 4MAT System (McCarthy, 1980)

**Linking the 4MAT Model to TGfU**

This section indicates how McCarthy's (1980) 4MAT model can be integrated with the TGfU approach. The first phase of McCarthy's model involves creating an experience. Although most students come to the physical education session with sport knowledge, the experiences invariably differ widely between individuals. Using the TGfU approach, a small-sided game would be set up and students encouraged to aim for the goals of the game (e.g., score points) whatever way they can. The physical educator's main role here is to observe the games and establish the needs of the students (e.g., tactical knowledge or skill development).

McCarthy's (1980) second phase involves reflecting on, and analysing, the experience. The physical educator's role here is to assist the students to gain greater tactical and technical awareness. A questioning approach may promote greater thinking on the student's behalf (Hadfield, 1994). Physical educators can use questioning to enhance students' understanding, not only so the students know what to do, and how to do it, but understand the principles of why they do it. Hadfield used this questioning approach as the basis of his *Query Theory*, which was developed primarily to aid in the technical development of physical education students. He believed that cognitive understanding and kinaesthetic self-awareness was crucial to improving performance; "if you can't feel it, you can't change it" (p. 20). A questioning approach can be logically extended to tactical appreciation. The use of this approach aims to link the modified game and skill practice when applying skills and tactical understanding in a game. Different levels of strategic complexity are dependent on the stage of student development (GrÈhaigne & Godbout, 1997; Griffin, Mitchell, & Oslin, 1997).

Having reflected on the experience, attention will now turn to the third phase of McCarthy's (1980) model – integrating relationships and analysing the information into concepts. The physical educator may question students further about the consequences of their actions and examine their understanding the underlying game principle (e.g., creating space). The students' cognitive understanding and kinaesthetic awareness of body position in space and body movements are crucial to learning and performing (Gallwey, 1974). Playing well in team sports means consciously/unconsciously choosing the right course of action (effectiveness) at the right moment and doing it well (efficiency) (GrÈhaigne, Godbout, & Bouthier, 2001). What differentiates the expert student from the novice is their ability to select and adapt techniques, and make decisions related to environmental cues and game situations with more successful outcomes.

The fourth phase of McCarthy's (1980) model involves the development of concepts and skills necessary to put into practice the newly conceived tactics. The

student may require further questioning that relates to aspects of both technical and tactical development. In comparison to the experience of the game in the first phase, the time taken to conduct phases two through four may be relatively short, particularly if the student quickly develops an understanding of what needs to occur.

In the fifth phase of McCarthy's model, students are involved in practicing the new tactics. This practice may occur within the same small-sided game, which was used in the first phase, or within a different small-sided game that better emphasises the value of employing the tactics being developed. The physical educator returns to the role of observation, and should intervene with questions when students need further assistance with the execution of skills and tactics.

McCarthy's (1980) sixth phase involves continuing to practice in the small-sided game plus adding individual creativity. In this sense, students would be encouraged to add their own individual flair when employing a tactic. For example, students may change the way they execute skills in order to change the tactic slightly and, hopefully, confuse opponents. All students have strengths and weaknesses when playing sport (e.g., height, weight, and speed) and they should be encouraged to use their natural strengths and abilities to their advantage. Like the fifth phase, the physical educator's role is largely observational, but can also include helping students to modify skills and tactics to better suit their games.

The seventh stage of McCarthy's (1980) model involves moving from the small-sided game into the whole game. Students learn when to use the tactical knowledge they have developed. Although students may wish to use some tactics consistently throughout the game, they may wish to reserve other tactics for certain situations, in order to surprise the opposition. Here, the physical educator's role is to assist, using questioning mainly, students to gain a greater awareness of what tactics may be appropriate to use at each stage of a game.

McCarthy's (1980) eighth stage involves applying what has been learnt in a more complex setting. The new tactics would be practiced in the whole game. The physical educator returns to the observation role again, and has discussions with the students, at appropriate moments, about how their games are developing.

**The Integrated Physical Education Model**

Figure 3 integrates the 4MAT Circle of Learning (McCarthy, 1980) and the TGfU approach (Bunker & Thorpe, 1982), and, by virtue of being included in McCarthy's model, the experiential learning cycle (Kolb, 1971, 1979). In the first

quadrant the physical educator develops a modified small-sided game, which allows students to reflect on tactical concepts. In quadrant two students are questioned about their decision making and understanding of these concepts in the game. The students then continue to practise the tactical concepts in quadrant three. Once again, performance is analysed in quadrant four with a focus on skill execution and adapting to the game context.
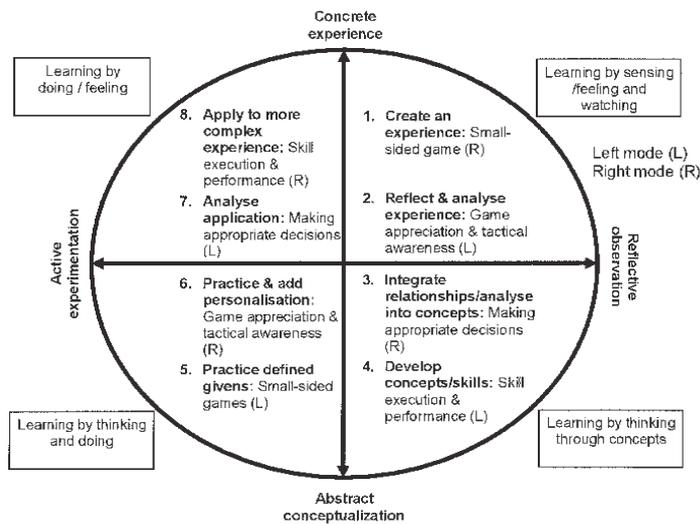
*Figure 3*.



*Figure 3*. The Integrated Physical Education Model

## Conclusion

In summary, the TGFU approach may be understood within a model of experiential learning. Physical educators can use this information to better tailor lessons to the needs of their students and structure a more effective learning environment.

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