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Promoting physical activity through teaching games for understanding in undergraduate teacher education

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PROMOTING PHYSICAL ACTIVITY THROUGH TEACHING GAMES FOR UNDERSTANDING IN UNDERGRADUATE TEACHER EDUCATION

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Abstract

Introduction

Physical education teachers play a significant role in influencing the likelihood that their students will engage in lifelong physical activity. However, with declining physical activity levels, particularly amongst young people, and the increased prevalence of obese and overweight children and adolescents, promoting lifelong physical activity is one of the many challenges currently facing physical education teachers. Teachers are required to engage students in quality learning opportunities to develop prescribed learning outcomes and skills, and make the experience enjoyable to enthuse young people to be physically active. This study examines whether teaching games for understanding (TGfU) and technique based pedagogy models in touch football lessons influenced participant physical activity and enjoyment levels.

Methods

Two groups (46 students in total) of second year pre-service Health and Physical Education teachers were observed participating in both a TGfU and a technique based lesson in touch football. Observers analysed the activity time of students in each lesson and additionally made subjective observations of student enthusiasm and their level of intensity of physical activity. At the conclusion of each lesson participating students completed an enjoyment questionnaire.

Results

The study indicated that the TGfU and technique based models resulted in minimal variation in physical activity time for most participants. However, the enjoyment questionnaires and peer observations, indicated that the level of enjoyment amongst participants was higher in the TGfU than the technique based model.

Discussion / Conclusions

Promoting lifelong physical activity to children and adolescence through physical education is a challenge. Physical education teachers need to reflect on their own teaching practice and recognise that alternative approaches to teaching games in physical education may be necessary to ensure that students are engaged in enjoyable and challenging learning experiences which cater for students with varying abilities and interest levels towards games.

Introduction

It is essential that teachers seek to actively engage students in a fun and enjoyable environment so that they will develop a positive attitude to physical activity. This study specifically analysed 2 different approaches to the teaching of games- the teaching games for understanding (TGfU) and the technique based approach to determine whether there was any difference in physical activity and enjoyment factors. Research and observation of games teaching in physical education typically shows a series of highly structured lessons based heavily on the teaching of technique [1,2,3,4]. This format generally divides the lesson into an introductory activity, a skill phase and finishes with a game. This traditional model has consistently revealed a large percentage of children achieving little or no success due to the emphasis on performance, skilful players who possess inflexible techniques and poor decision-making capabilities, players who are dependent on the teacher/coach to make their decisions, and a majority of children who leave school knowing little about games [5]. The transition from technique learning to game play is difficult for children without an understanding of how and when to use their skills [3].

Teaching games for understanding

Teaching games for understanding provides students with a more substantive base and clearer frame of reference for learning about critical elements of game play. The TGfU approach to teaching games places the focus of a lesson on the student in a game situation where cognitive skills such as 'tactics, decision-making and problem solving are critical… with isolated technique development utilised only when the student recognises the need for it' [6]. Other terminology and variations of TGfU [7] include: 'Play Practice' [8], the 'Games Concept Approach' [2] and more recently, 'Playing for life' [9]. Modifying and adapting games is also an important part of using the TGfU approach. The concept of 'modification for exaggeration' is used to emphasis particular tactical aspects.

Using the game of hockey as an example, it is important that the student first has an understanding the game, that the ball must be moved down field, with the intention of scoring a goal. An appreciation of the game might include a grasp of the concept of moving down the field individually or as a team whilst thwarting the opponent's attempts to take control. One of many examples of tactics is passing to players on the wing to run the ball up field. Whether to have a shot at goals, or whether to pass to a player in a better position is where the skill of decision-making is required. Finally skill execution and performance is required to perform a flick shot to score in the top corner of the goals.

Teaching games for understanding is an approach to teaching that makes very effective use of active learning in that the students are learning though playing the games. In addition to this, 'questioning is a powerful method of encouraging players to analyse their actions, both individually, and as a team' [10]. Questions will generally relate to a particular tactical aspect. Effective phrasing of questions can also help to guide the player to an answer, in the event that they are struggling with an activity. Age, experience and ability level of the players will affect the complexity of the questions used [10].

Given the decreased involvement of children in physical activity, TGfU is aimed at encouraging children to become more tactically aware and to make better decisions during the game. As well, it encourages children to begin thinking strategically about game concepts whilst developing skills within a realistic context and most importantly, having fun. Essentially by focusing on the game (not necessarily the 'full' game), players are encouraged to develop a greater understanding of the game being played. Thomas states that the desired effect of this is 'players/students who are more tactically aware and are able to make better decisions during the game, thereby adding to their enjoyment of playing the game' [11]. She also gives an account of workshops where participants were asked to identify what they perceived as the strengths of TGfU, with the following five major themes emerging. TGfU was found to:

- Encourage a holistic approach to the teaching of games
- Promote enjoyment for participants
- Promote player centred learning
- Cater for varying abilities
- Foster efficiency in aspects of implementation

TGfU has been shown to result in improved learning outcomes for students. Games are a significant component of the physical education curriculum, with research suggesting that '65 per cent or more of the time spent in physical education is allotted to games' [5]. Key outcomes of successful physical education are students that have the ability to make successful decisions on the field and have an awareness of both technical and tactical aspects of the game [12].

There is also a relationship between time spend 'practicing fundamental movement skills' and competence in fundamental movement. Research shows that children who are competent in FMS are more likely to enjoy sports and activities and to develop a lifelong commitment to physical activity. Research also suggests that children who do not master the FMS are more likely to drop out of physical activity later in life [9]. Primary aged children have recently been exposed to TGfU concepts through the Australian Sports Commission's 'Playing for life' approach adopted in their Active After School Communities (AASC) coach training program. AASC is a national program that is part of the Australian Commonwealth Government's $116 million Building a Healthy, Active Australia package. It provides primary aged school children with access to free, structured physical activity programs in the after school time slot of 3.30 pm to 5.30 pm. The program is designed to engage traditionally non-active children in physical activity and to build pathways with local community organizations, including sporting clubs. 'Playing for life' is an approach to coaching that uses games as the focus of development. By concentrating on game-based activities, children are able to: develop skills within a realistic and enjoyable context, rather than practicing them in isolation and from a technical perspective. Become maximally engaged in dynamic game-based activities that use a fun approach to developing a range of motor skills' [9].

Research [5,13,14,15,16] indicates the strengths of the TGfU approach and the desirability of it as one of the major approaches to quality teaching of games. Light [13] highlighted the effectiveness of TGfU for engagement and cognitive learning. Higher order thinking occurs from questioning and discussion about tactics and strategies and also 'through the intelligent movements of the body during games' [13]. Cognitive development through decision-making and tactical exploration are combined with skill development within modified games to provide meaningful contexts. Light suggests that it is difficult for some physical educators to address cognition in games. TGfU is one pedagogical approach that may assist teachers and coaches to address this issue.

Light [17] examined the response for teaching games for understanding pedagogical approach in an Australian University to Bachelor of Education students studying primary teaching. Student evaluations were generally positive indicating an increase in enjoyment, understanding and cognitive engagement in the games. In comparing games sense to skill-based teaching, Werner et al, state that…'while the teacher may be convinced that skill-based lessons are having a positive effect in that some immediate skill improvement is made, the social and skill related interactions might over time convince the youngsters of their lack of ability' [5]. Thorpe and Bunker argued that a skill-based approach to teaching less physically able students is likely to: '…result in a sense of failure, a lack of enjoyment, poor self-concept and subsequently inhibition of long term participation' [18] In contrast to this, the students who exhibited low physical and technical ability in the TGfU lessons consistently reported significantly higher and more positive scores for these same factors. 'It appears that a skills-based approach serves only to highlight, confirm and reinforce – often publicly – the pupils lack of physical ability' [18].

Turner and Martinek [16] compared two middle school physical education lessons on hockey – one using the traditional method and the other TGfU. They found that there was a clear trend towards better decision making for the TGfU group, who also scored higher for procedural knowledge. The TGfU approach enabled students to control a hockey ball more adeptly, make better passing decisions, and execute passing more effectively than under a technique approach. Harrison, Blakemoore, Richards and Oliver in their study of volleyball players, found that TGfU also increases self-efficacy of players [19].

This study further investigated the amount of physical activity and enjoyment of students exposed to the TGfU approach compared to traditional teaching of games.

Method

Ten students in each group were monitored in both the technique based and the TGfU lessons by observers to determine the time spent being physically active and their perceived level of enjoyment. Each lesson using both the technique based approach and the TGfU lesson were of thirty minutes duration. Group 1 did the TGfU lesson first followed by the technique based lesson while group 2 did the reverse. Touch (football) was the activity used for both lessons. Touch is a sport played by 6 players where the object is to cross a scoreline by passing the ball backwards on a 70 by 50 metre field. The TGfU lesson consisted of an introductory end ball game of 6 a side where the participants could pass the ball forwards or backwards to get to a player over a scoreline. If a player is touched when in possession they have 3 seconds to pass the ball. Key questions included: If you are the ball carrier what are your options ? If you not the ball carrier and are on the attacking team what are you trying to do? As a defender what are your options? The participants then returned to the game keeping in mind the basic strategies from the questioning. Each team also spent a few minutes developing strategies for attack and defence before returning to the game. Following this 2 further progressions were added to the game – 6 touches or possessions before a changeover to the other team, and you must pass the ball backwards after being touched. Further questioning after each progression took place around strategies, rules and technique.

The technique based lesson consisted of a warm up followed by basic skill and drill activities. The first activity was in groups of 4 with a semi-circle facing outwards where they had to pass the ball backwards around the circle. The next activity the object was to pass the ball backwards in a stationary line. This was followed by a progression of going to a moving line. The focus was on the correct technique of passing the ball backwards. The participants finished with a minor game of 5 passes which took place in a grid approximately 10 metres square. Each team tried to get 5 passes to score a point while their opponents tried to intercept or force a mistake.

At the end of each lesson the participants completed an enjoyment questionnaire modified from Kendzierski and Decardo [20].

Results

Level of physical activity

When comparing the time spent being physically active in the technique based lesson compared to the TGfU lesson there was no significant difference. However, the results of the enjoyment surveys and the subjective observations indicated that the level of enjoyment amongst participants in both groups was higher in the TGfU than the technique based model. Table 1 indicates the findings of the peer observations of time spent being physically active by the ten students monitored in each group.

Group 1	Group 2
6 participants were more PA in TGfU	3 participants were more PA in TGfU
3 participants were more PA in technique	6 participants were more PA in technique
1 participant's level of PA was unchanged	1 participant's level of PA was unchanged

Table 1. Variation in time spent on physical activity

Written comments made by peer observers indicated that they generally felt that there appeared to be higher levels of physical activity in the TGfU lessons than the technique based lessons. One observer noted that the participant they observed had only touched the ball once in the minor game component of the technique based lesson but in the TGfU lesson had been actively involved throughout. Several observers commented that in the technique lesson skills utilised were more 'non-locomotor' in nature, and they felt that there was generally less movement by all participants in the technique based lesson, with many participants having minimal contact with the ball compared to the TGfU lesson. Another observer commented that the activities in the technique based lesson appeared to be 'simple or basic' and did not appear as challenging as those in the TGfU.

Level of enjoyment

Research supports the concept that the motivation to be physically active is influenced by a participant's level of enjoyment. The results of this study support the inclusion of TGfU in physical education programs as a strategy to promote enjoyment in physical education.

The enjoyment questionnaire completed by each participant included thirteen statements with students indicating their feelings on a scale from 1 (negative feelings) through to 7 (positive feelings). The total of the student responses to all statements are shown in Table 2.

negative feelings		1	2	3	4	5	6	7	positive feelings
Group 1	TGfU	2	11	20	44	85	94	46	
	Technique	8	32	62	70	100	41	5	
Group 2	TGfU	6	8	10	49	82	112	19	
	Technique	3	18	27	91	81	36	26	

Table 2. Responses: Level of enjoyment questionnaire

The results of the survey clearly indicate that for students in both groups their level of enjoyment was greater in the lesson that followed TGfU model than their level of enjoyment in the technique based lesson. The subjective observations made of student level of enjoyment indicated that most observers found the participants to be more enthusiastic, and the lessons appeared to be more fun and enjoyable in TGfU than technique (see table 3).

	Teaching games for understanding (TGfU)	Technique-based
Group 1	• Active when playing the game • Involved x 4 • As game moved on become less motivated • Enthusiastic about the game x 2 • Always active not just within the game • Too much Instructional time x 2 • Games not interesting/boring • Interacted well with others	• Bored x 3 • Skills were all non-locomotor x 4 • Less intensity then Game Sense • Too much time explaining the activities • Limited physical activity x 4 • Lots of static/stationary activities x 8 • Active
Group 2	• Enthusiastic x 3 • More Motivated x 2 • Locomotor x 2 • More active x 4 • Increased Heart Rate • Fun and enjoyable • Teacher talking time was too long x 3	• Active and constantly moving • Not as much movement as Game sense x 2 • Were involved • More walking x 2 • Some locomotor • Semi Active especially in warm-up x2 • During the game touched the ball once • Simple/basic activities x2

Table 3. Written comments by observers.

These subjective observations support the results of the questionnaire. As level of enjoyment of physical activity is a critical factor influencing an individual's participation in physical activity, these results demonstrate that TGfU has the potential to promote lifelong physical activity.

Conclusion

In conclusion, two different approaches to the teaching of games were analysed to determine if there were any differences in activity and enjoyment level. While there was no difference in activity level there was in enjoyment favouring the TGfU approach. The next step in this study would be to follow the group of students involved in this study during their professional teaching experiences to determine their level of enjoyment when teaching lessons based on the TGfU model compared to those which followed the technique based model.

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