
Style E Tactical Pedagogical Model

Sanmuga Nathan

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.74033>

Abstract

This chapter reveals the early development of eclectic game-based pedagogical model labeled as the Style 'E' Tactical (SET). The SET underpins Style E from Spectrum of Mosston teaching styles, variations of Teaching Games for Understanding (TGfU) models and constraints-led theory. The efficacy of SET was first tested as an experimental research comparing with two other teaching approaches developed from Mosston teaching styles and TGfU known as Style B Tactical and Style H Tactical among secondary school boys. The findings revealed that the SET achieved learning outcomes that were better than, or equal to, the results obtained from the two other teaching approach, as for speed, knowledge, skill execution, and tactical decision-making in field hockey. In another research tested among Malaysian aborigines' primary school students in 5 versus 5 mini soccer games, findings indicated no significant difference in skill execution between SET and TGfU pedagogical models. Whereas in handball study, findings indicated significant improvement via TGfU, SET for skill execution, and decision-making in 4 versus 4 game play, increased in knowledge and interest compared to the technical model. To conclude, this SET could bridge the disparity between varying student-teacher centered in game learning; however, more research is needed to fulfill the claim.

Keywords: SET pedagogical model, game play, varying skill levels, Mosston teaching styles, TGfU

1. Introduction

Physical education (PE) teachers may agree that helping elementary students mastering basic fundamental motor skills at times is very challenging as many will agree that direct instruction would be one of the best teaching approaches dealing with less-skilled and slow learners. Whereby, the fundamental motor skills such as catching, kicking, running, striking, throwing, jumping, and so on play an integral role as prerequisite elements for game play. Those students

with good grasp of these fundamental skills are able to catch up game play competence in secondary school much more easier compared to those students who are weak in fundamental skills. Therefore, the dilemma exists in game play instruction, when to use direct instruction or indirect such as employing game-based approaches (GBAs). In the lens of Malaysian PE classes, direct instruction approach via demonstration of skills and skill-led drills approach still considered useful before introducing game play approach for students in early primary years and secondary school in learning games. Based on some preliminary research in hockey and badminton, students need to be taught to practice game skills via skill drills prior introducing to tactical guided discovery game play approach. On the other hand, GBAs such as Teaching Games for Understanding (TGfU), Game Sense, and Play Practice, which are much sought types of pedagogical model via student-centered tactical inquiry approach, seem to be global approach [6, 15].

Tactical pedagogical model such as TGfU is a favorable global game learning approach proven by numerous research findings. However, when handling this approach, one must act with caution [5, 19, 20]. At times, this approach seems to be conundrum for slow and low-skilled learners to solve their game play problems as their cognition level, skill, and fitness do not support this approach. As game play configurations require players to grasp various elements such as basic motor skills, fitness, game tactical knowledge, rules and regulation, concentration, cooperation, and so on. Therefore, it is upheaval task for teachers to plan game activities especially employing tactical approach. What more in different situational learning environment with traditions, politics, and philosophy pose challenges for teacher in planning game play via GBAs.

Teaching games and enhance game playing abilities require a teacher to design various learning task considering students' varying abilities, learning environment, and biological and chronological developmental age. This requires teacher and educator to use different and eclectic models in dealing with students' varying abilities in game teaching and learning. Models seem to be entrusted game teaching and learning approach lately as it seems to be more holistic in curriculum alignment in sense of content, pedagogy and assessments [10, 16].

In the context of game teaching-learning in PE classes, the overall purpose of any means of instructions to fulfill three learning domains viz. psychomotor (motor), cognitive and affective. As Barret reiterated that all students learning tasks in PE be it motor, cognitive, and affective aspects require deliberate consideration and planning to cater the varying students' skill and ability levels. For example, motor aspect of passing a ball in hockey including hitting and pushing the ball to the partner. The skill of executing hitting and pushing to pass the ball, this skill needs to be learned before the players able to execute automatically [1]. Meanwhile, the affective aspects that include feeling of continuity of flow and the feeling of cooperation in executing the hockey task, players need to mold as well, whereas the cognitive aspects that include deciding whether to dribble or passing and deciding where to send the ball so as to score goals. Therefore, it is pertinent to consider these three domains, especially, and the motor domain as well as the cognitive and affective domain before preparing game play tasks, which are complex and chaotic for learning [8, 9].

Sometimes, it is necessary to group children by their ability levels in invasion games. Experts highlighted, a child who cannot run fast can never be tagged as the fast runner, so playing

game is embarrassing for the slow runner and boring for the fast runner while playing with low-skilled runner or player [19]. Those children who are involved in after school experience in playing invasion games such as soccer, hockey, and basketball, to name some, can dominate learning tasks and playing games in physical education context to an extent than the less-skilled children. At most of the times, less-skilled children never get opportunities to practice passing because high-skilled children tackle and steal the ball quickly. Therefore, opportunity should be given in learning tasks or game play according to the children's skill and ability group. Teachers through their instructional approach can group the children based on their skill level and do not announce that you are arranging groups by ability and skill level, just do it [21].

Metzler highlighted that there has been a shift in the research paradigm among authors with the majority of research into skills-based learning becoming largely irrelevant in game teaching. Moreover, model-based approaches such as TGfU, Sports Education model, Fitness model to name a few seem to be much-sought instructional model in physical education lately compared to teaching styles instruction [10]. On the contrary, motor learning exponents heightened the importance of the influence of constraints-led theory factors such environment, task and performer that can shape game learning and game performance. As mentioned earlier, environments may influence children or students to grasp higher skill or ability than students who do not involve in after school activities. Considering on such scenario, it is pertinent for teachers to choose the right type of teaching and learning instructions and activities to cater all levels of students to match the motor, cognitive and affective levels.

Therefore, considering these pitfalls and pedagogical dilemmas, the author of this chapter introduces an eclectic pedagogical model known as Style E Tactical (SET). The development of Style E Tactical (SET) evolved around Style E or inclusion of Mosston teaching style, the original model of TGfU, revised TGfU model supported by tactical framework elements from Tactical Game Model by Mitchell, Griffin and Oslin and some elements from constraints-led theory [2, 7, 11, 14–17].

2. SET pedagogical development

Theoretical background provides the provisions and guiding principle for the author to develop pedagogical model of Style E Tactical (SET). First, the author unpacked the underpinnings of spectrum of Mosston and Ashworth teaching style that do have some unique styles that are able to address and shaping of players on learning to play game [12]. As depicted in **Figure 1**, there are 11 styles arranging from teacher's centered teaching to student-centered learning styles. However, in this present SET pedagogical model, the Inclusion Style or Style E from this spectrum was selected. As this teacher-centered behavioral style as teacher provides opportunities for individual students or in groups to practice a task at their chosen entry level of difficulty. Furthermore, they too self-assess their performance using established teacher-prepared criteria sheet. The early part of this lesson labeled pre-impact or the planning stage as the teacher prepares the task of subject matter or content and materials with different entry

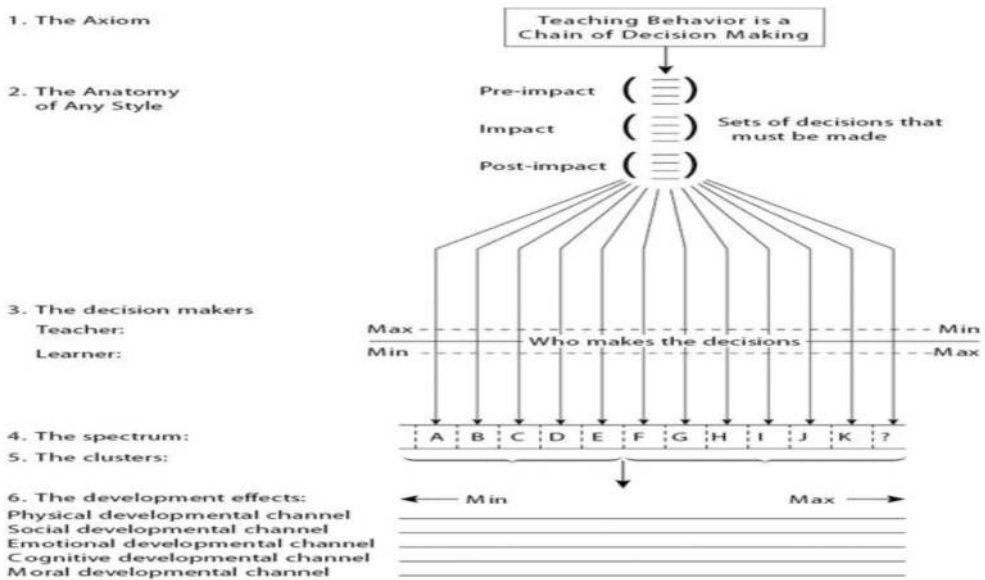


Figure 1. Mosston and Ashworth teaching styles (with permission from Sara Ashworth).

of difficulty level for all learners so that varying students will enjoy and capable of doing the planned task by the teacher. Next, the impact stage deals with the task or lesson intervention, while post-impact refers to reflection on teaching had on students learning.

On the other hand, the original TGfU model with six steps of learning as illustrated in **Figure 2** was coined practically in Loughborough University in the late 1960s, much more sought learning game play model via tactic skill learning approach compared to linear and structured skill-led model [2, 13] despite TGfU being established as the instructional model globally in game curriculum of physical education and coaching setting. However, as mentioned by Kirk and Macphail, the original TGfU should be aligned with the emergence of new learning theory to stay relevant, therefore, revised TGfU model as reflected in **Figure 3** also play an important role in supporting the original TGfU model [7].

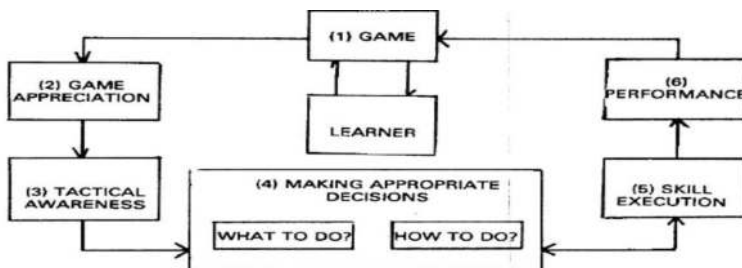


Figure 2. Original TGfU model with permission from Rod Thorpe.

The original and revised models of TGfU [2, 7] were further blended with Tactical Game Model (TGM) by Mitchell, Griffin and Oslin [12]. As TGM proposes attacking strategy, defending strategy, and restarting as integral part, tactical strategy of game play as well as the importance of assessment in a game play, hence, Game Performance Assessment Instrument (GPAI) was introduced to assess the tactical decision-making, skill acquisition within small-sided game play situations [14].

Skill acquisition stems robustly among motor learning theory generator for long time and skill execution crucial for any game play. These motor learning advocates the values of constraints-led theory (CLT) in shaping and chaining players with game skills, movement skills and game play knowledge. The motor learning proponents argue that the constraints-led framework can help physical educators to build their teaching and learning instruction using different tasks, level of performer, and environmental constraints to explain how learners acquire movement skills and decision-making behaviors. The constraints-led approach was developed based on ecological psychology and dynamical system. The constraints-led theory, as shown in **Figure 4**, is divided into three categories such as performer, environments, and task as these factors that interact shape students' behaviors as created by Newell to provide a framework for understanding how skills and movement patterns emerge during task performance [17].

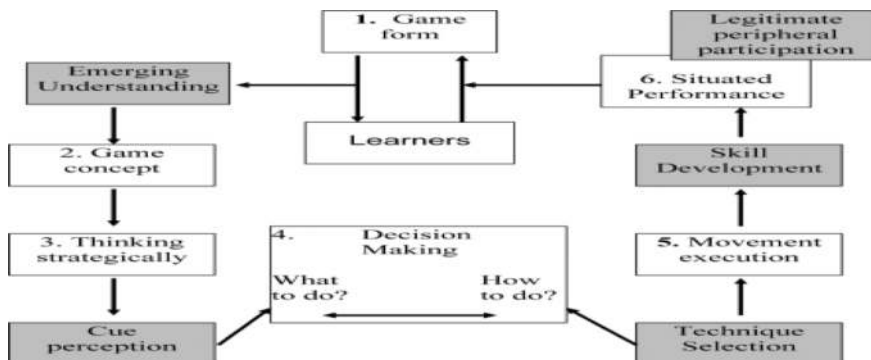


Figure 3. Revised TGfU model by Kirk and Macphail [7] with permission from Prof. David Kirk.

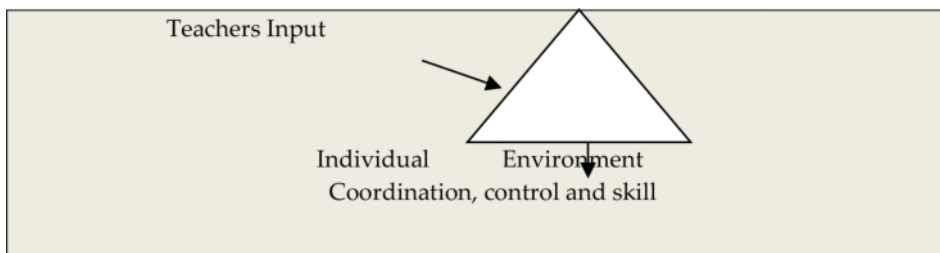


Figure 4. Constraints-led theory.

2.1. The SET pedagogical model development

The innovative pedagogical model of Style E pedagogical model (SET) still at initial stages of development specially designed for invasion types of games learning such as hockey, soccer, and so on. The heuristic is being developed by principal researcher and SET creator Sanmuga Nathan [15, 16]. This model dwelled using various combination predominantly using Mosston's teaching style of E (Inclusion Style) in terms of pre-impact, impact and post-impact framework and activities merged with six steps of learning from original model of TGfU [2] and skill drills development and cues from revised TGfU model. Besides, this SET pedagogical underpins three important elements (task, performer and environment constraints) of constraint-led theory [17]. As learning game play and game performance to a great extent underpins the influence of learning task, the performer or students and environment condition during practicing game play. Therefore, lesson task designed by the teacher should consider the level of performers.

What is of value is an exploration of these models, from an integrated perspective, with the possibility that such a model could provide a firm basis leading toward the development of a stronger conceptual framework for teaching invasion games, with the additional bonus of optimization of individuals' different performances [16]. However, to date, still lack of research and practical experience in addressing players with different ability, skill level and environmental constraints learning the game play and upgrading game performance. The teaching and learning dovetails do consider the important dynamics of social interaction and emotional values of a varying range of students' skill levels and ability [15, 4]. As such, the SET pedagogical model aims to cater for students at different entry learning levels as well as a learner's emotional and social characteristics.

As **Figure 5** represents schematic SET pedagogical caters students' varying skill abilities. With the intention of catering for students who have different levels of ability in games (high, medium and low), the emerging eclectic pedagogical model of SET was conceived to achieve an improvement in psychomotor, cognitive and affective learning output and outcomes as to support the product and process curriculum. Thus, the principal aim with this approach is to improve learning process and game play performance in terms of tactical decision-making and skill performance as well as social-emotional values. Through the application of the SET model, there is every probability that students' game learning and playing competency can be upgraded. The heart of SET pedagogical model and the lesson tasks were prepared during preimpact stage in three different difficult entry levels viz. high, medium, and low difficulty levels to cater students in three different skill levels. Meanwhile, in impact stage, the teacher clustered students into high-skilled, medium-skilled and low-skilled without informing the group according to their skill levels and enable them to engage tasks according to their skill level. Their game play task follows the sequence of activities: first activity involves warming-up and game-related strategies. The second activity is based on analyzing tactical topic, application discussed tactic in small-sided game play, and some tactical drills. The third

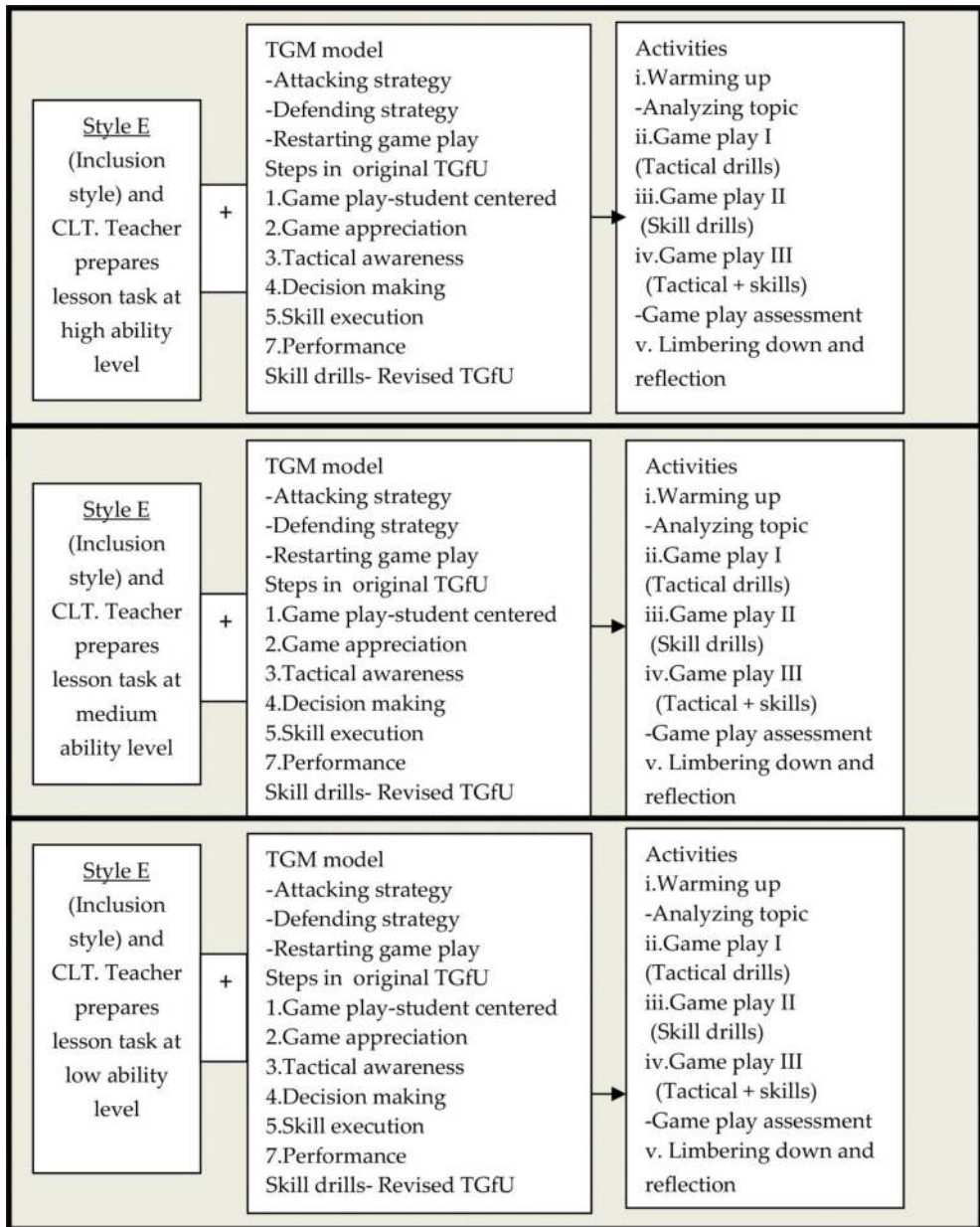


Figure 5. Schematic SET pedagogical caters students' varying skill abilities.

activity revolves around skill discussion and application skill execution in small-sided game play plus skill drill activities. Then, the fourth activity proposes efficient application tactical-skill in game play situation, as at this stage, the students will be evaluated using modified game play observation instrument (GPAI) and limbering down. Oral and written reflection will be made by students and teacher at the post-impact lesson stage.

Table 1 illustrates some lesson guiding principle and tactical framework (attacking strategy, defending strategy and restarting game play) in planning game-based lessons for invasion game such as field hockey, while **Table 2** depicts wall and net game play herewith an example of badminton game play. The game lesson dwelled around using tactical topics, learning standard (1 refers to Psychomotor, 2 refers to cognitive and 3 refers to affective standards), learning objectives through psychomotor, cognitive and affective domains correspond to learning standards through SET pedagogical model.

Unit	Topics: tactical problems/ assessments	Learning objective domains	Learning standards
1	Scoring Maintaining ball possession Adopted GPAI Affective domain assessment	Psychomotor: To create players who are able to possess, retain the ball, and be able to make accurate passes to teammates Cognitive: So players can utilize the declarative knowledge of the games and are able to make basic tactical decisions during the game Affective: To learn to enjoy the game play	1. Able to execute ball control and execute accurate passing skills of in field hockey 2.1. Able to describe the importance of ball control and passing skills. 2.2. Able to justify when and where to use passing skills. When and where to apply open space tactics while attacking and when to cover while applying defending strategy during 2 vs 2, 3 vs 3, and 5 vs 5 game play 3. Able to demonstrate happiness while engaging in the activities
2	Scoring/attack - Attacking the goal - Creating space in attack Adopted GPAI Affective domain assessment	Psychomotor: To permit players to be able to control the ball and make skillfully make accurate passes, dribble, anticipate, tackle and score goals To enhance players, not in possession of the ball, ability to be able to provide "width" and support to the attacking players Cognitive: Players are able to make meaningful tactical decisions related to passing, dribbling, tackling and scoring goals Affective: To enable players to enjoy the game	1. Able to execute ball control and execute accurate skills of passes, dribble, anticipate, tackle and score goals in field hockey 2.1. Able to describe the importance of passes, dribble, anticipate, tackle and score goals in field hockey. 2.2. Able to justify when and where to use passes, dribble, anticipate, tackle and score goals. When and where to apply open space tactics while attacking and when to cover while applying defending strategy during 2 vs 2, 3 vs 3, and 5 vs 5 game play 3. Able to demonstrate happiness while engaging in the activities
3	Prevention of scoring/defense - Defending space - Winning the ball Adopted GPAI Affective domain assessment	Psychomotor: Players know how to defend the space and goal from the attacking team. Players are able to use skill, such as ball control, passing, dribbling, anticipating, and tackling in defense. So that players can repossesses the ball from attacking players Cognitive: Players are able to make correct tactical decisions using declarative and procedural knowledge to win the ball when	1. Able to defend space and goal skills from attacking team in field hockey 2.1. Able to describe the importance such as ball control, passing, dribbling, anticipating, and tackling in defense in field hockey. 2.2. Able to justify when and where to use passes, dribble, anticipate, tackle and score goals. When and where to apply open space tactics while attacking and when to cover while applying defending strategy during 2 s 2, 3 vs

Unit	Topics: tactical problems/ assessments	Learning objective domains	Learning standards
		defending space Affective: So that the students enjoy the game	3, and 5 vs 5 game play 3. Able to demonstrate happiness while engaging in the activities
4	Prevention of Scoring -Winning the ball Adopted GPAI Affective domain assessment	Psychomotor: So that players are able to use skill such as ball control, passing, dribbling, anticipating, and tackling in defense. Players can repossesses the ball from attacking players Cognitive: Tactical decision making using declarative and procedural knowledge to win the ball back Affective: Appreciation and enjoyment of the game play	1. Able to use skill such as ball control, passing, dribbling, anticipating, and tackling in defense in field hockey 2.1. Able to describe the importance in field hockey. 2.2. Able to justify when and to use skill such as ball control, passing, dribbling, anticipating, and tackling in defense and repossesses the ball from attacking players. When and where to apply open space tactics while attacking and when to cover while applying defending strategy during 2 vs 2, 3 vs 3 and 5 vs 5 game play 3. Able to demonstrate happiness while engaging in the activities
5	Restarting Play - Push in - Hit in Adopted GPAI Affective domain assessment	Psychomotor : So that the players will employ correct push or hit skills with accuracy during the restarting of the game Cognitive : To encourage players to make correct tactical decisions, using declarative and procedural game knowledge Affective : So that the students enjoy the game play	1. Able to employ correct push or hit skills with accuracy during the restarting of the game 2.1. Able to describe the importance push and hit in field hockey. 2.2. Able to justify when and to use skill such as push or hit skills with accuracy during the restarting of the game. When and where to apply open space tactics while attacking and when to cover while applying defending strategy during 2 vs 2, 3 vs 3, and 5 vs 5 game play 3. Able to demonstrate happiness while engaging in the activities

Table 1. Invasion game topics, learning standard, learning objectives, and assessment.

On the other hand, **Tables 3a** and **3b** provides a lesson plan and task card using SET pedagogical model for hockey, while **Tables 4a** and **4b** illustrate a lesson plan and task card for badminton. These lesson plans were planned based on learning content, learning standard, learning objectives in terms of psychomotor, cognitive, and affective domain, teaching aids, ways to foster critical and creative thinking skills and assessments based on three objectives domain. The manipulation of lesson activities based on different game situation, discussion and application of tactics, skills via guided discovery approach predominantly and some skill drills with cue perception to improve skill developments, different task cards for students in varying skill groups of high-skilled (HS), medium-skilled (MS) and low-skilled (LS). As per lesson, each group of students will be provided with task cards to assist their learning pursuit as depicted in **Tables 3b** and **4b**.

Standard-based curriculum propagates the importance of curriculum alignment of instructional design and assessment. Therefore, **Table 5** presents game play instrument adapted from

Unit	Topics: tactical problems, assessments	Learning objectives	Learning standards
1	Restarting (Service) Scoring strategy Adopted GPAI Affective domain assessment	Psychomotor: Students able to execute badminton skills of high, low forehand and backhand service, technically sound in game play situations Cognitive: Students able to discuss and apply where to send high, low forehand and backhand back service during offensive strategy in badminton game play situations Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations	1. Able to execute high, low forehand backhand service badminton game play 2.1. Able to describe high, low and backhand service. 2.2. Able to justify when and where to use low and high service 3. Able to demonstrate happiness while engaging in the activities
2	Scoring strategy and defending strategy Adopted GPAI Affective domain assessment	Psychomotor: Students able to execute badminton movement skills to the base, forehand overhead clear as well as underhand stroke of clear, technically sound in and singles doubles mini game play situations Cognitive: Students able to discuss and apply when and where to create space in attacking strategy and close space during defending strategy in doubles mini game play situations Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations	1. Able to execute movement skills to base, as well as able to executive skills of forehand overhead-underhand stroke of clear in badminton 2.1. Able to describe various movement skills to base, skills of underhand and overhead stroke of clear. 2.2. Able to justify when and where to use underhand and overhead stroke of clear. When and where to apply open space and close space tactics while attacking and defending strategy during doubles game play situations 3. Able to demonstrate happiness while engaging in the activities
3.	Scoring strategy and defending strategy Adopted GPAI Affective domain assessment	Psychomotor: Students able to execute badminton movement skills to the base, forehand overhead clear as well as underhand stroke of clear, technically sound in doubles mini game play situations Cognitive: Students able to discuss and apply when and where to create space in attacking strategy and close space during defending strategy in doubles mini game play situations Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations	1. Able to execute movement skills to base, forehand overhead-underhand stroke of clear in badminton 2.1. Able to describe various movement skills to base, skills of underhand and overhead stroke of clear. 2.2. Able to justify when and where to use underhand and overhead stroke of clear. As well as when and where to apply open space and close space tactics while attacking and defending strategy during doubles game play situations 3. Able to demonstrate happiness while engaging in the activities
4.	Scoring strategy and defending strategy Adopted GPAI Affective domain assessment	Psychomotor: Students able to execute badminton forehand and backhand drop short, technically sound in doubles mini game play situations Cognitive: Students able to discuss and apply when and where to create space in attacking strategy and close space during defending strategy in doubles mini game play situations Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations	1. Able to execute executive skills of forehand and backhand overhead drop short badminton 2.1. Able to describe various movement skills to skills of underhand and overhead drop short. 2.2. Able to justify when and where to use underhand and overhead drop short. As well as when and where to apply open space and close space tactics while attacking and defending strategy during doubles game play situations 3. Able to demonstrate happiness while engaging in the activities

Unit	Topics: tactical problems, assessments	Learning objectives	Learning standards
5.	Scoring strategy and defending strategy Adopted GPAI Affective domain assessment	Psychomotor: Students able to execute badminton forehand and backhand drop short, technically sound in doubles mini game play situations Cognitive: Students able to discuss and apply when and where to create space in attacking strategy and close space during defending strategy in doubles mini game play situations Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations	1. Able to execute executive skills of forehand and backhand overhead drop short badminton 2.1. Able to describe various movement skill to skills of underhand and overhead drop short. 2.2. Able to justify when and where to use underhand and overhead drop short. As well as when and where to apply open space and close space tactics while attacking and defending strategy during doubles game play situations 3. Able to demonstrate happiness while engaging in the activities

Table 2. Net/wall game topics, learning standard, learning objectives, and assessment.

Class: Grade 5-6

Time: 8.00-9.00 **Topic:** attacking strategy, ball control, and dribbling

Learning standard:

1. Able to execute ball control, dribbling skills of in field hockey. 2.1. Able to describe the importance of ball control and dribbling skills .2.2. Able to justify when and where to use dribbling skills. When and where to apply open space tactics while attacking and when to cover while applying defending strategy during 2 vs 2, 3 vs 3, and 5 vs 5 game play. 3.1. Able to demonstrate happiness while engaging in the activities

Learning objectives

Psychomotor: Students different skills group (High Skills (HS), Medium Skills (MS), and Low Skills (LS) able to execute ball control, dribbling and cover skills, technically sound in 2 vs 2, 3 vs 3, and 5 vs 5 game play situations

Cognitive: Students able to discuss and apply when and where to create space in attacking strategy and cover space during attacking and defending strategy in 2 vs 2, 3 vs 3, 5 vs 5 game play situations

Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations

Elements across curriculum (EMK): Creative and critical in examining tactics and skills in field hockey. **Teaching aids:** Racket, shuttle, nets, skittles, poster, video

Evaluation of T&L: Skills execution and tactical decision making base on modified GPAI observation instrument.

Reflection: By teacher and students reflection using affective assessment

Learning development	Activities of T& L (instructional activities)	Organization	Discovery (discussion and questions)									
Preimpact (planning done by teacher)	Teacher plans activities based on students' different ability levels (HS, MS, and LS)	Teacher divides students based on ability level, without telling them their ability level. Teacher guides the group to choose the activities such 2 vs 2, 3 vs 3, and 5 vs 5. Adjusting game play size, goalmouth, ball and so on.	Topic of discussion difficulty varies according skill groups. Groups will provided with task cards.									
Phase 1 Discussion on strategy of attacking and defending tactics, Dynamic warm-up with hockey sticks	Warming-up activities with sticks and ball using zigzag running and ball control skills with roll and tap as dominant activities	Based on skill groups. Students in the given specific area roll, tap and control ball ac warming up activities <div style="text-align: center;"> <table style="margin: auto;"> <tr> <td>HS</td> <td>MS</td> <td>LS</td> </tr> <tr> <td>XXXXXX</td> <td>XXXXXX</td> <td>XXXXXX</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> </table> </div>	HS	MS	LS	XXXXXX	XXXXXX	XXXXXX	↓	↓	↓	Q: Why do roll and tap ball A: To control ball and important for 3 vs 3 dribbling activities.
HS	MS	LS										
XXXXXX	XXXXXX	XXXXXX										
↓	↓	↓										


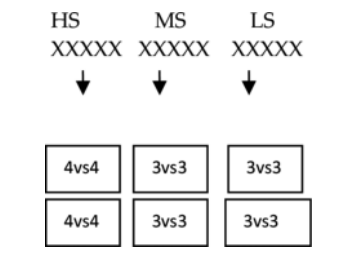
<p>Phase 2 Planning and applications of tactics and skills (15 min)</p>	<p>Mini game 1 Creating space for attack and closing space and cover while defending 3 vs 3 (HS)/12 min (2 sets of goal mouth), 3 vs 3 (MS)/10 min (1 set of goal mouth), 3 vs 3 (LS)/8 min (1 set of goal mouth)</p>		<p>Q: How do you attack the goalmouth? A: Passing, looking open space to attack at goal mouth. Q: How do you cover your opponent from scoring in your goalmouth? A: Man-man tackle or zone marking.</p>
<p>Phase 3 Skill drills (15 min) Planning and applications skills ball control, dribbling and cover in game play (15 min) Adapted GPAI observation</p>	<p>Group skill drills i. Dribble and ball control in pairs ii. Cover in two pairs. Mini game 2 4 vs 4 (HS)/12 min (2 sets of goal mouth), 12 min 3 vs 3 (MS)/10 min (1 set of goal mouth), 3 vs. 3 (LS)/8 min (2 set of goal mouth)</p>		<p>Q: How do dribble ball A: Using low or high dribble especially employing India dribble technique.</p>
<p>Phase 4 Reflection (5 min) Affective Assessment</p>	<p>Closure Reflection and cooling down</p>	<p>XXXXXXXXX (HS, MS, LS) T (Teacher)</p>	<p>Cooling down Summary and reflective discussion.</p>

Table 3a. An SET pedagogical model lesson plan for field hockey.

HS group	MS group	LS group
<p>Learning task 1 Mini game situation 1 Task: Creating space for attack and closing space and cover while defending in 3 vs 3 for 12 min (2 sets of goal mouth) Skill drills in groups i. Dribble and ball control in pairs ii. Cover in two pairs Learning task 2 Mini game situation 2 Task: Efficient skill execution in 4 vs 4 for 10 min (4 set of goal mouth)</p>	<p>Learning task 1 Mini game situation 1 Task: Creating space for attack and closing space and cover while defending in 3 vs 3 for 10 min (1 set of goal mouth) Skill drills in groups i. Dribble and ball control in pairs ii. Cover in two pairs Learning task 2 Mini game situation 2 Task: Efficient skill execution 3 vs 3 for 10 min (2 sets of goal mouth)</p>	<p>Learning task 1 Mini game situation 1 Task: Creating space for attack and closing space and cover while defending in 3 vs 3 (LS)/8 min (1 set of goal mouth) Skill drills in groups i. Dribble and ball control in pairs ii. Cover in two pairs Learning task 2 Mini game situation 2 Task: Efficient skill execution in 3 vs 3 (LS)/8 min (2 set of goal mouth)</p>

Table 3b. A task card for field hockey game play activities.

GPAI instrument with permission from Mitchell, which is able to assess students’ game play performance in terms of psychomotor, cognitive domain, and affective domain-based SET pedagogical model. Based on adapted GPAI instrument, teacher can observe students’ varying skill levels modified small-sided game through various parameters of game play such as psychomotor domain ball control, support players without ball, skill execution (passing, dribbling, tackling and scoring), cognitive domain, (passing, dribbling, tackling, and scoring), and affective domain (positive and negative behaviors as reflected in Table 6).

Class: Form one **Time: 8.00-9.00 Topic: Badminton (Forehand stroke)**
Learning standard:

1. Able to execute high, low forehand backhand service badminton game play. 2.1. Able to describe high, low forehand, and backhand service. 2.6.3. Able to justify when and where to use low and high service. 3. Able to demonstrate happiness while engaging in the activities

Learning Objectives

Psychomotor: Students able to execute badminton skills of high, low forehand and backhand service, technically sound in game play situations

Cognitive: Students able to discuss and apply where to send high, low forehand and backhand back service during offensive strategy in badminton game play situations

Affective: Students able to take responsibility to organize, administer positive and encouraging doubles mini game play situations

Elements across curriculum (EMK): Creative and Critical thinking in examining tactics and skills

Teaching Aids: Racket, shuttle, nets, skittles, poster, video

Evaluation of T &L: High and low service execution and tactical decision making (GPAI instrument)

Reflection: By teacher and students (before, during and after game play)

Learning development	Activities of T&L (instructional activities)	Organization	Discovery (discussion and questions)
Pre-impact (Planning done by teacher)	Teacher plan activities based on students different abilities level (HS, MS and LS)	Teacher divide students base on ability level, without telling them their ability level. Teacher guides the group to choose the activities	Topic of discussion: Question for discussion varies difficulties according skill groups. Groups will be provided with task cards.
Phase 1 Warm up, and followed discussion o skills (10 min)	Warm-up: students in HS and MS practicing footwork from the base to the base of court. Looking at pictures and video students create warming up activities via footwork. LS play forehand service game with volleyball	Half court singles	Q: Why footwork important in badminton game play? (HS and MS). Q: How to execute footwork? (HS and MS). Q: Where do you send the softball so that you win a point (LS)?
Phase 2 Planning and applications of tactics and skills (15 min)	Mini game situation 1 (Creating space): Push and attacking opponent at open space at the back. Work across the grid in half court singles using overhead clear	Half court single 1 vs. 1 (Forehand grip and game play, Q&A, 15 minutes for HS) .1 vs 1 (Forehand grip and game play 12 min for MS) 1 vs 1 (forehand grip and game play with Q &A 12 min for LS)	Q: How do you score a point in badminton? (HS, MS, LS)) Q: How do you stop your opponent from scoring? (HS, MS, LS) Q: How can you push your opponent back? (HS, MS) After pushing your opponent back at baseline, where the space you can attack? (HS, MS). Q: How do you attack the front space rather? (HS) What skill do you use? (HS and MS)
Phase 3 Planning and applications of skills (Q& A forehand high	Skill drills Forehand service	Half court singles 1 vs. 1 (forehand high and low service)	Q: What sort of service, could you use or single and doubles game play? (HS, MS).

and backhand low service application in skill drills and game play) (30 min)
Teacher teach forehand and backhand service (LS)



2 vs 2 (backhand low service)

Q: When do you use forehand high, low and backhand service? (HS, MS). Q: How to execute forehand service? A: *Forehand grip. Shake hands with racquet, thumb on ten o'clock, all four fingers wrapped around the grip. Thumb and first finger of the hand create a "V" shape on the racket handle. Palm is leading the movement, fingers are spread*
Q: How to execute backhand service? (HS, MS).A: *Use a short, relaxed thumb grip. Place the racket out in front of the body. Place shuttle on racket. Backswing. Take the racket back a short distance. Open racket face slightly. Make forward swing. Push through and strike the shuttle out of the hand and follow through.*

Mini game situation 2

- i. Application of forehand high, low service in single using half court.
- ii. Skill drills

Backhand service



Mini game situation 3

- ii. Application of backhand low service in single using full court

Phase 3
Reflection
(5 min)

Closure
Reflection and cooling down

Whole

Cooling down
Summary and reflective discussion.

Table 4a. An SET pedagogical model lesson plan for badminton.

2.2. Research findings

The initial work of SET model was compared with two other developed teaching models, which have combination of TGfU and Style B and H from Mosston teaching style characteristics. These two styles labeled as SBT (Style B combined with Tactical element of TGfU) and SHT (Style H combined with tactical elements of TGfU) [14]. Through the application of the SET model to practical game training in the sport of field hockey, this model was tested and evaluated using balanced factorial design with repeated measures technique. Analysis of the results revealed that the SET model achieved learning outcomes that were better than, or equal to, the results obtained from the two other teaching models for most learning domains (general skill, knowledge and ball control, decision-making, skill execution in mini game play and interest) specifically for the sport of field hockey. As for speed and accuracy for the execution of general hockey skills, it is revealed that the SET model together with SBT and SHT training models demonstrated a significant improvement in speed and accuracy, immediately after the training intervention (posttest 1), Wilks' Lambda = .888, $F(4, 426) = 6.492$, $p < 0.01$. The SET

HS group	MS group	LS group
<p>Learning task 1 Warm-up: students in HS practicing footwork from the base to the base of court. Looking at pictures and video students create warming up activities via footwork.</p> <p>Learning task 2 Tactical (Creating space) 1 vs. 1 (Forehand grip and creating space game play 15 minutes, via Q&A,</p> <p>Learning task 3 (30 min) Q & A Forehand service and skill drills Mini game situation 2. Application of forehand high, low service in 1 vs 1. Q & A backhand service and skill drills Mini game situation 3.: Application of backhand low service in single using full court</p>	<p>Learning task 1 Warm-up: students in MS practicing footwork from the base to the base of court. Looking at pictures and video students create warming up activities via footwork.</p> <p>Learning task 2 Tactical (Creating space) 1 vs. 1 (Forehand grip and creating space game play 12 minutes, via Q&A,</p> <p>Learning task 3 (25 min) Q & A Forehand service and skill drills Mini game situation 2. Application of forehand high, low service in 1 vs 1. Q & A backhand service and skill drills Mini game situation 3.: Application of backhand low service in single using full court</p>	<p>Learning task 1 LS play forehand service game with volleyball Learning task 2 Tactical (Creating space) Half court single 1 vs 1 (Forehand grip and creating space game play 12 minutes though teacher instruction) Learning task 3 (20 min) Forehand service and skill drills – teacher instruction Mini game situation 2.: Application of forehand high, low service in 1 vs 1. Backhand service and skill drills – teacher instruction Mini game situation 3.: Application of backhand low service in single using full court-teacher instruction</p>

Table 4b. A task card for field badminton game play activities.

training model showed that performance was retained from posttest 1 to posttest 2 without the training intervention of speed of execution of general hockey skills as compared with the other two training models $F(2,148) = .201, p < 0.01$. As for declarative and procedural knowledge, the three programs SET, SBT, and SHT training programs indicated significant improvement at posttest 1, with Wilks' Lambda = .920, $F(4, 420) = 4.51, p < 0.01$. On the other hand, for ball control, decision-making (passing, dribbling, tackling, scoring) and skill execution (passing, dribbling, tackling, scoring) showed that the SET model together with SBT and SHT training models produced significant improvement immediately after training intervention for ball control, decision-making and skill execution in 3 versus 3 game play at posttest 1, Wilks' Lambda = .676, $F(6, 188) = 6.773, p < 0.05$. However, the SET training model only showed sustainability or retention of performances for skill execution from posttest 1 to posttest 2.

In another quasi-experimental physical education study, Farihan Sulong examined the effects of Teaching Games for Understanding (TGfU) and Style E tactical (SET) pedagogical model on aborigines' primary school student in 5 versus 5 mini game in Malaysia using intact sampling of, $n = 30$, male, aged 10 ± 12 years old who were equally divided into two groups of TGfU and SET [3]. This study completed 6 weeks of intervention. Players' game performances were evaluated in terms of decision-making (attacking and defending), skill execution (passing, receiving the ball, dribbling and scoring) in a modified game situation of 5 versus 5. The data were analyzed using one-way ANOVA. Findings indicated there was no significant difference in game component of skill execution between these two pedagogical models. However, as for decision-making, component findings indicated there was significant difference between the

GAME OBSERVATION INSTRUMENT FOR HOCKEY (Adopted GPAI)

AGE GROUP: Team: Game:

Date:..... Evaluator:

Scoring Key

5 = Very effective performance, 4 = Effective performance (Usually), 3 = Moderately effective performance (Sometimes), 2 = Very weak performance, 1= Very weak performance (Never)

Components and Criteria

- Skill execution (passing, dribbling, tackling and scoring) – Players pass the ball accurately, reaching the intended receiver
- Decision making (passing, dribbling, tackling and scoring)- Players make appropriate choice when passing, dribbling, tackling and scoring (i.e., passing to unguarded teammates to set up a scoring opportunity – right decision)
- Ball control –Players able to control the ball
- Support – Players attempt to move into position to receive a pass from teammates (i.e., forward the goal)

Key: BC: Ball Control, DM: Decision Making SE: Skill Execution

pass: passing, drib: dribbling, tack: tackling sc: scoring, sup: support

Team:.....

Name/Number	BC		DM		SE			SUP	
	pass	drib	tack	sc	pass	drib	tac	sc	
1									
2									
3									
4									
5									
6									
7									
8									
9									

Adopted GPAI with permission Mitchell et al. [12].

Table 5. Game play observation instrument for psychomotor and cognitive domain.

TGfU (7.33 ± 4.92) and SET (3.86 ± 2.55), $F(1,28) = 5.85$, $p = .022$, $p < 0.05$) after intervention. As conclusion, SET needs further research to confirm the as effective as TGfU model for aborigines’ students for game play outcome. In another study, Palanippa investigated the effect of TGfU, SET Pedagogical Style and Technical model among junior secondary school boys 13 ± 14 via quasi-experimental study in terms of skill execution (passing and scoring) and tactical decision-making (passing and scoring) in 4 versus 4 mini game play and enjoyment aspect in handball [18]. The results revealed that there was a significant improvement using instructional models of TGfU, SET and Technical on the posttest score for passing, scoring and decision-making ability in 4 versus 4 game play. Qualitative findings for enjoyment aspect showed that TGfU and SET instructional models enhanced students’ skill mastery, knowledge and increase of interest compared to the Technical model.

Affective Domain Assessment Net and Wall Games (Field hockey)

Name of student:
 Class: Evaluated name:..... Team: Observation date:

The purpose of this assessment is to keep track of behaviors displayed by students learning tasks and game play. Whether or not you assign a point value to the categories is your decision. Keep in mind that games are self-officiated, so there will be opportunities to observe students taking responsibility for their behavior

Points
 Positive behavior identified 5 4 3 2 1 negative behavior identified

Acceptable behaviors	Unacceptable behaviors
Supports and encourages teammates	Lacks any show of support or encouragement for teammates
Follows all call without argument	Argues or breaks rules regularly
Other	Other
Total	Total

Adapted with permission Mitchell et al. [12].

Table 6. Game play observation instrument for affective domain.

3. Conclusion

The SET pedagogical is still an early part of implementation; therefore, more research and validation are needed to further improve the SET pedagogical model across different culture and background. This pedagogical model could bridge the disparity between teacher-centered approach and students’ game learning across physical education and coaching context.

Acknowledgements

The author would like to extend sincere appreciation and gratitude to the Education Ministry of Malaysia in allowing to access and conduct studies with Malaysian students. The author also acknowledges and expresses gratitude to Universiti Pendidikan Sultan Idris and Universiti Sains Malaysia for supporting the author to conduct research and publish the abovementioned SET pedagogical model. The author would like to extend sincere thanks to TGfU colleagues Prof. Steve Mitchell, Prof David Kirk, and Sir Rod Thorpe for giving permission to utilize their models and instruments and also Prof. Sarah Ashworth, the co-developer of Mosston teaching styles and host of others that were mentioned here.

Author details

Sanmuga Nathan

Address all correspondence to: sanmuga@fsskj.upsi.edu.my

Universiti Pendidikan Sultan Idris (Sultan Idris Education University), Tanjung Malim, Malaysia

References

- [1] Barret. I wish I could fly. A philosophy in motion; 1972. In Rovegno I, Bandhauer D, editors. *Elementary Physical Education Curriculum and Instruction*. Burlington, USA: Jones and Bartlett Learning; 2013. pp. 70-83
- [2] Bunker DD, Thorpe R. A model for the teaching of games in the secondary schools. *The Bulletin of Physical Education*. 1982;**10**:9-16
- [3] Sulong F. Effects of TGfU and SET pedagogical model on mini games performance among aborigines primary school student in Malaysia [Unpublished undergraduate dissertation]. Tanjung Malim: Universiti Pendidikan Sultan Idris. 2016:1-75
- [4] Ferry M, McCaughtry, Kulina PM. Social and emotional pedagogy: Rhythm and junctures. *Journal of Teaching Physical Education*. 2011;**30**:13-30
- [5] Griffin LL, Paton K. Two decades of teaching games for understanding: Looking at the past, present and future. Champaign, IL: Human Kinetics; 2005
- [6] Jung H, Choi E. The importance of indirect teaching behaviour and its educational effects in physical education. *Physical Education and Sport Pedagogy*. 2016;**21**(2):121-136. DOI: 10.1080/17408989.2014.923990
- [7] Kirk D, McPhail A. Teaching games for understanding and situated learning: Rethinking the Bunker-Thorpe Model. *Journal of Teaching in Physical Education*. 2002;**21**:177-192
- [8] Light R. The joy of learning: Emotion and learning in games through TGFU. *Journal of Physical Education New Zealand*. 2003;**36**(1):93-103
- [9] Light R, Fawns R. Knowing the game: Integrating speech and action in games teaching through TGfU. *QUEST. National Association for Kinesiology and Physical Education in Higher Education*. 2003;**55**:161-176
- [10] Metzler M. Implications of models-based instruction for research on teaching: A focus on teaching games for understanding. In: Griffin LL, Butler JI, editors. *Teaching games for understanding: theory, research, and practice*. Champaign: Human Kinetics; 2005
- [11] Mitchell SA, Griffin LL, Oslin JL. Tactical awareness as a developmentally appropriate focus for teaching of games in elementary and secondary physical education. *The Physical Educator*. 1994;**51**:21-27
- [12] Mitchell SA, Oslin JL, Griffin LL. Teaching sport concept and skills. A tactical games approach for ages 7 to 18. *Human Kinetics*. 2013:1-259
- [13] Mosston M, Ashworth S. *Teaching Physical Education*. 5th ed. New York: Benjamin Cummings; 2008
- [14] Nathan S. The effects and sustainabilities of training programmes using tactical model of TGfU with different teaching styles on students with varying hockey skills level. Paper

presented at the Asia Pacific Sports Education Conference. 21 January 2008; Flinders University, Australia

- [15] Nathan S. Badminton instructional in Malaysian schools: a comparative analysis of TGfU and SDT pedagogical models. Springer Plus. 2016;5:1215. DOI: 10.1186/s40064-016-2872-3
- [16] Nathan S, Haynes J. A move to an innovative games teaching model: Style E Tactical (SET). Asia-Pacific Journal of Health, Sport and Physical Education. 2013;4(3):287-302. DOI: 10.1080/18377122.2013.836769
- [17] Newell KM. Constraints on the development of coordination. In: Wade MG, Whiting HTA, editors. Motor Development in Children. Aspects of Coordination and Control. Dordrecht, Netherlands: Martinus Nijhoff; 1986
- [18] Palanipan V. The effect of TGfU and SET instructional models towards handball game configuration among form two boys [Unpublished PhD dissertation]. Tanjung Malim: Universiti Pendidikan Sultan Idris; 2017:1-203
- [19] Rink J. Teaching Physical Education for Learning. New York: McGraw Hill Education; 2013. pp. 1-384
- [20] Rink J. TGfU celebrations and cautions. In: Butler J, Griffin L, editors. More Teaching Games for Understanding Moving Globally. Champaign, IL: Human Kinetics; 2010. pp. 1-157
- [21] Rovegno I, Bandhauer D. Elementary Physical Education Curriculum and Instruction. Burlington, USA: Jones and Bartlett Learning; 2013

