DEVELOPING SKILLS IN PHYSICAL EDUCATION:
WHAT IS MOST IMPORTANT?

Ray Breed
St Leonard’s College – Melbourne, Victoria.
Ray.breed@stleonards.vic.edu.au

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“The way I see it, you’re only 13 million range balls away from taking 2 strokes off your game.”
INTRODUCTION

PART 1 – What drives our program?  
Program Outcomes!

PART 2 – Learning a Skill

PART 3 - FMS

PART 4 – Game Sense

PART 5 – Developing the Curriculum (content & pedagogy)

References – Ray Breed & Michael Spittle: Game Sense  
Bernie Holland (ACHPER Victoria)
A philosophical problem:

- **Scenario:**

You have a co-ed, mixed ability year 7 HPE group of 25 students.

1. Do I ‘teach’ them all HOW to bowl a cricket ball?
2. If so, do I also ‘teach’ them a forward defence, off drive, pull shot etc.)
3. What is it we are trying to achieve? What are our OUTCOMES!
4. How much time do we have?

So do our practices match our outcomes & philosophy?
PE: What are some of the issues?

• The most common ‘problems’ (7-10 PE):
  (1) **Not enough time** to teach skills
  (2) A lot of different skills and sports to teach
  (3) Students are not skilled enough to play games
  (4) Engaging mixed-ability groups
  (5) No transfer of skill in to game scenarios

< 15% of 13-17y.o. Australian children do not meet the APAG (60mins PA/day, < 2hrs electronic media/day) *(Aust Dept of Health)*

**IS IT POSSIBLE TO TEACH/LEARN EVERY SKILL?**

Think of all the FMS, SSS, tactics and sports we (think we) need to teach! PLUS health and wellbeing?
WHERE TO START?

1. Philosophy and mission statement
2. Limitations and constraints?
3. Student outcomes
4. Course/unit sequence
5. Content
6. Pedagogy
7. Assessment
PART 1: PROGRAM OUTCOMES?

HPE: What are OUR core outcomes?

• In 25 words or less what is the key **philosophy** or focus that drives your HPE Program?

• Victorian teachers asked to list top 5 outcomes of PE 7-10:
  1. Fun and enjoyment
  2. Social skills – team, group work
  3. Values – respect, morals
  4. Developing tactical skills
  5. Developing technical skills

• So does our practice match our outcomes & philosophy?
Overview:
• Clarify the intent or purpose of our HPE program
• How does careful planning result in clear content, pedagogy, assessment and evaluation?

Each student has the right to develop skills and behaviours needed for lifelong physical activity in a healthy and safe environment!

- So, by the end of year 10:
  - “What are the essential knowledge, skills and behaviours that you want students to leave your school’s HPE program with?”
  - This should drive the curriculum and pedagogy!!

Development is not 1 year only! It is a journey from F-10!
Developing Physical Literacy

Physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities (Whitehead, 2016).

AUSTRALIAN SPORTS COMMISSION (2017)

- Physical literacy is lifelong holistic learning acquired and applied in movement and physical activity contexts.
- It reflects ongoing changes integrating physical, psychological, cognitive and social capabilities.
- It is vital in helping us lead healthy and fulfilling lives through movement and physical activity.
Developing Physical Literacy – How?

Physical Literacy

GAME SENSE

Technical (FMS)  Tactical  Social/behavioural  Affective

TECHNICAL SKILLS  TACTICAL SKILLS  SOCIAL/BEHAVIOURAL  AFFECTIVE
- Practice in-game  - Improved application of technical skills to games  - Improved group problem solving skills  - Enjoyment
- Less likely to break down  - Improved retention & transfer  - Improved social skills – working together  - Motivation
- More adaptable  - Increased tactical knowledge  - Small teams
- Improved decision-making

GAME SENSE PRINCIPLES
- Implicit learning  - Student centred  - Transfer of skills
- Practice variability  - Higher order thinking  - Constraints-led
- Open-ended questioning  - Small groups/teams
PART 2: THE LEARNER

SKILL = Technical + Tactical + Pressure

DEVELOPING SKILL

PRACTICE  INSTRUCTION  FEEDBACK
Skill Learning Continuum

CLOSED  FMS  SSS  GAME SENSE

OPEN
FMS & Game Sense

**CONTENT**
( Curriculum )

**FMS**

**SSS** (sport specific skills)

**Game Sense**

**PEDAGOGY**

**Technical**

**Game Sense**
PART 3: FMS

• FMS are the *foundation movements* to more specialised, complex skills in games, sports, dance, gymnastics and physical recreation activities.

• They have specific observable patterns which develop in a sequential manner (*Seefeldt, 1975; Wickstrom, 1983*)

• Normally improves with age (*Branta et al 1984*)

• Not automatic – genetic & environmental influences:
  Opportunity to practice (*Espenschade & Eckert, 1980*)
  Quality of practice (*Gallahue, 1989*)
  Quality of instruction (*Seefeldt, 1975*)
• Students who achieved FMS competence have been found to:
  • successfully participate in a range of sports and movement activities
  • more likely to maintain involvement during later childhood and adolescence

• Plenty of evidence that FMS proficiency leads to increased physical activity
• Prevalence of FMS mastery is low (Okley & Booth, 2004).
• 30–40% of children had not achieved mature patterns of the FMS (Hardy et al, 2010)
• FMS proficiency is low, especially among girls. (Booth 2006, Barnett 2008)

• What is the impact of low FMS on what can be taught across the HPE curriculum?
11 Critical Fundamental Motor Skills (Vic)

1. Catch
2. Kick
3. Run
4. Vertical leap
5. Overhand throw
6. Ball bounce
7. Leap
8. Dodge
9. Punt
10. Forehand Strike
11. Two handed strike

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Time to reflect!

- Are they all created equal?
  - What if you only had time to teach only 4 of these?

Which ones would you teach?

- Overhand Throw
- Catch
• **Sport Specific Skills (SSS)** are mature FMS, refined & combined to meet demands of more specific tasks (eg. volleyball spike, basketball rebound)

• **Sport Specific Concepts** include factors such as moving into space, when to pass, team strategy

*Diagram 2. Relationship between Fundamental Motor Skills and Specific Sports Skill (Overarm Throw)*

> What about a FMS/Game Sense unit/program???
Kirk (1989): 3 main concerns of using traditional/technical approach:

2. Games often played in major form. Create minor/small-sided games common to the full version. Advantages?
3. Games usually presented as discrete units. Many have tactical similarities. ‘Thematic learning’.

Can group games into 3 main categories:

- Invasion
- Striking/fielding
- Net/wall
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>GAME EXAMPLES</th>
<th>STRATEGY EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Invasion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) court</td>
<td>Netball, basketball, korfball, team handball.</td>
<td>• Attack: invade an opponent’s space (creating space) to score through a target/goal</td>
</tr>
<tr>
<td>(b) field</td>
<td>Soccer, hockey, football, lacrosse, speedball.</td>
<td>• Defence: to occupy/block up space</td>
</tr>
<tr>
<td>(c) field end-zone</td>
<td>Rugby codes: Touch, League, Union, Grid iron.</td>
<td></td>
</tr>
<tr>
<td>2. Striking/fielding</td>
<td>Kickball, teeball, rounders, softball, baseball, cricket.</td>
<td>• Batting team: strikes ball away from fielders to allow maximum time for running</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fielding team: occupy positions on the field to minimise running time</td>
</tr>
<tr>
<td>3. Net/wall</td>
<td>Downball, bat tennis, table tennis, badminton, squash, tennis, volleyball.</td>
<td>• To place the ball away from your opponent/s</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Occupy positions to minimise the distance to an opponent’s shot</td>
</tr>
</tbody>
</table>
# Link between FMS, Game Sense & Sport

<table>
<thead>
<tr>
<th>FMS Skills</th>
<th>Game Concepts</th>
<th>Games (Breed &amp; Spittle)</th>
<th>Sports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhand throw, catch. Run, leap, dodge, vertical jump.</td>
<td>Invasion – invading space. When to pass the ball? Where to pass the ball? How to pass the ball? Where to run? (space) Working together as a team. Offensive principles. How rules shape games.</td>
<td>2v1 keeping off Gauntlet 4v2 break out Corner ball Team tag Prison break End zone</td>
<td>Netball Basketball Korfball Team Handball</td>
</tr>
</tbody>
</table>
Teaching Game Sense

1. GAME OUTCOMES
   (1) Develop a small-sided game that has repetition of tactics
   (2) Game must have a clear PURPOSE and OUTCOMES – eg. learning when to pass the ball

2. QUESTIONING
   - Is a vital component in developing ‘thinking skills’ within game sense.
   - Game sense is not merely about ‘playing games’: it needs to have questions to stimulate thought, higher-order thinking, and guide tactical responses!
   - The teacher’s role is to help students solve tactical problems

3 types of questions:

(1) Strategy-guiding:
   EG: where should you hit the ball? When should you pass? Where should you pass?

(2) Sport-linking:
   EG: what strategies are similar between cricket and softball?

(3) Scenario-based:
   EG: what should you do if.....? If the team is 1pt down, how would your strategy change?

Turn feedback into questions: when, what, where, why, how?
3. TASK CONSTRAINTS

<table>
<thead>
<tr>
<th>LEARNER CONSTRAINT</th>
<th>ENVIRONMENTAL CONSTRAINT</th>
<th>TASK CONSTRAINT***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height, weight, body type</td>
<td>Court surface</td>
<td>Level of pressure</td>
</tr>
<tr>
<td>Strength, power, endurance</td>
<td>Temperature, weather</td>
<td>Rules – eg. 3 secs, contact, off-side</td>
</tr>
<tr>
<td>Motivation, confidence</td>
<td>Background noise</td>
<td>Area/size</td>
</tr>
<tr>
<td>Mental – anxiety</td>
<td>Motivation of peers</td>
<td>Number of players</td>
</tr>
<tr>
<td>Technical skills</td>
<td>Crowd, spectators</td>
<td>Time</td>
</tr>
<tr>
<td>Tactical skills – decision-making</td>
<td>Peers, teachers watching</td>
<td>Scoring method</td>
</tr>
<tr>
<td>Experience</td>
<td>Cultural factors</td>
<td>Zones/areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equipment – modified, size, weight</td>
</tr>
</tbody>
</table>

(1) Change one constraint (variable) at a time, then observe.
(2) Link questions to the constraint change.
(3) Relate to game outcomes.

The “teacher/coach is a facilitator!”
GAME SENSE MODEL

PLAY
(SMALL-SIDED GAME)

QUESTION
(RE: STRATEGY)

REPLAY
(OBSERVE STRATEGY)

MODIFY
(SUITABLE TO SKILL LEVEL)

Game: Team Tag Ball

- 5 v 5 in a small square area (~10x10m)
- One team has possession of the ball for 2 mins. Then swap over roles.
- Aim is to tag as many opposition players as possible
- Can’t run with ball
- Can’t tag same person twice in a row

- What type of pass was best to use? (E.g. short/long?)
- Where was the easiest place on court to tag the opposition?
- How did you work as a team to gain as many tags as possible?
- Which team tried to create space? Which team tried to block up space? (Hence: which team was like attackers/defenders in invasion games?)

- After asking 2 or 3 questions, replay the game working on strategies that came from the student responses
- Evaluate – observe if the game is better. Have strategies improved?
- Repeat the game a few times (asking questions between each game) until improvements in strategy are clearly observable

Only change 1 rule/aspect of the game at a time (then ask further questions relating to the change between each game!). E.g.:
- Change the ball/object i.e., to a Frisbee
- Make the area bigger (say 15x15m)
- Allow team to intercept ball for one point
Evidence/measurement used to show if learning had improved?
1. Observation – confidence/affective
2. Time on task/involvement – student engagement and participation
3. Questionnaire/pre-post test – 15 questions (1-5 scale).
4. GPS measurement – physical activity levels – 2 sessions. 7W striking/fielding.

(A) CONFIDENCE
(B) AFFECTIVE (EG. ENJOYMENT/BEHAVIOURS)
(C) KNOWLEDGE & GAME SKILLS
Results? GPS (Striking/Fielding x 2 classes)

NB: Striking/Fielding is traditionally considered quite an ‘inactive’ game category

1. Front oval
2. Warm-up with throwing/catching, skill tasks not measured
3. Students played 3 x 10minute games (with 5 minute innings’)
4. GPS recorded just the small-sided game part – 46 minutes on average:
   (1) 30 minutes of games/playing (batting/fielding)
   (2) 16 minutes for changeovers, questioning, task constraint/rule changes
   (3) GPS recorded whole 46 minute period

<table>
<thead>
<tr>
<th>km</th>
<th>avg kph</th>
<th>peak kph</th>
<th>high efforts</th>
<th>sprint efforts</th>
<th>t med</th>
<th>t high</th>
<th>t sprint</th>
<th>dist low</th>
<th>dist med</th>
<th>dist high</th>
<th>dist sprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.56</td>
<td>2.1</td>
<td>17.90</td>
<td>48</td>
<td>22</td>
<td>0:05:14</td>
<td>0:01:27</td>
<td>0:01:07</td>
<td>0.43</td>
<td>0.53</td>
<td>0.26</td>
<td>0.29</td>
</tr>
<tr>
<td>1.82</td>
<td>2.5</td>
<td>20.28</td>
<td>63</td>
<td>33</td>
<td>0:05:46</td>
<td>0:01:55</td>
<td>0:01:39</td>
<td>0.46</td>
<td>0.61</td>
<td>0.36</td>
<td>0.44</td>
</tr>
<tr>
<td>1.31</td>
<td>1.8</td>
<td>16.31</td>
<td>39</td>
<td>15</td>
<td>0:04:53</td>
<td>0:01:09</td>
<td>0:00:46</td>
<td>0.42</td>
<td>0.52</td>
<td>0.19</td>
<td>0.19</td>
</tr>
</tbody>
</table>
## Results?

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>QUESTION EXAMPLE</th>
<th>AVERAGE /5</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFFECTIVE</td>
<td>I enjoyed HPE this year</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>I liked the Health classes</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>I liked the PE classes</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>I liked playing small team games in PE</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>I enjoy moving and being active in HPE</td>
<td>4.8</td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td>I learnt more using TGfU than traditional drills/skills</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td>I know the main strategies of the 3 game categories</td>
<td>4.6</td>
</tr>
</tbody>
</table>

1. Confidence improved – more students answering questions
2. TGfU is a more enjoyable approach to technical learning
3. Students felt more involved/were more involved – were active during sessions
4. Students prefer game play to skill drills
The most common questions/problems:
(1) Not enough time to teach skills
(2) Having to teach a lot of different skills and sports in a short time
(3) Students are not skilled enough to play games
(4) Engaging mixed-ability groups
(5) No transfer of skill in to game scenarios

IS IT POSSIBLE TO TEACH/LEARN EVERY SKILL?
Think of all the FMS, SSS, tactics and sports we (think we) need to teach! PLUS health and wellbeing?
1. OUTCOMES

1. Tactical: students can identify and move to space.
2. Technical: students can effectively pass the ball to teammates.

1. Social: students can effectively work with all of their peers.
2. Behavioural: students are always ready and prepared.

Affective: students are enthusiastic and motivated to learn.

2. CONTENT

Game sense: small-sided games that encourage moving to space and how/where to pass.

Small-sided team games. Leadership roles. Set each team tasks. Questioning.

Encouragement and feedback.

3. ASSESSMENT

NB: Assessment can be pre, during and/or post unit.
1. It should be linked to Victorian Curriculum and your key outcomes
2. Most common form – rubrics and observation
3. Other types: - checklists, quizzes/tests, assignments - Self assessment/goal setting, peer assessment - Video analysis/game analysis.
### What/when do I teach FMS & Game Sense?

<table>
<thead>
<tr>
<th>Stage of Learning</th>
<th>GAMES/TEAM SPORTS</th>
<th>INDIVIDUAL SPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr P-2 (5-8yo)</td>
<td>FMS (Locomotion – jump, land, run. Catch, throw, ground kick) Games specific to FMS.</td>
<td></td>
</tr>
<tr>
<td>Yr 3-4 (8-10)</td>
<td>FMS (speed/acceleration, agility. Bounce, punt kick. 1-hand strike, 2-hand strike). Games specific to FMS. What are games? How do rules shape games? Simple game sense (how to pass, when to pass, where to run?).</td>
<td></td>
</tr>
<tr>
<td>Yr 9-10 (14-16)</td>
<td>Sport-specific game sense/SEPEP (Thematic eg. FB codes/rugby codes)</td>
<td>Technical/tactical – eg. Golf, Table Tennis, Archery, Bowls (lifetime/recreational sports).</td>
</tr>
</tbody>
</table>
So, what is important.............
to develop skills and behaviours needed for **lifelong physical activity**
in a healthy and safe environment!

**Active & Healthy Lifestyle**

- FMS & Game Skills
- Social & Behavioural
- Affective: enjoyment & motivation
- Physical Activity

**CONTENT**
+ **PEDAGOGY**
FINAL REFLECTION: Do I teach all sport techniques?

• Scenario:

You have a co-ed, mixed ability year 7 HPE group of 25 students.

1. Do I ‘teach’ them all HOW to bowl a cricket ball? (PLUS forward defence, off drive, pull shot etc.)
2. What are we trying to achieve? (what are our student outcomes?)

So do our practices match our outcomes & philosophy?
Conclusion

• Time is always going to be an issue (in all subjects!)
• What is your school/faculty philosophy? Outcomes?
• A need to develop FMS before age 9 (grades P-4)
• Structure the HPE curriculum around game concepts and strategies (grades 4-10)
• Thematic units in practical PE – no longer teach by sport
• Integrate Health and PE
• Sport - an opportunity to apply game skills learned in PE
• Keep students moving and active!
• Link to Australian Curriculum
• Great resource – Breed and Spittle: Game Sense

THANK YOU!
Breed & Spittle (2011):
“Developing Game Sense through Tactical Learning – a resource for teachers and coaches”
Cambridge University Press

Developing Game Sense through Tactical Learning - A Resource for Teachers and Coaches offers an Australian perspective on this instructional approach to sport teaching and coaching.

Unlike any other book on this popular and evolving topic Developing Game Sense through Tactical Learning offers:
• theoretical foundations of game sense, including motor learning and pedagogical models combined with practical ideas and suggestions
• an extensive section on teaching/coaching methods and how to instruct using a tactical approach, including questioning techniques
• thorough descriptions of invasion, striking/fielding and net/wall games with diagrams, group organisation, variations and questions
• eight complete units of work suitable for primary and secondary physical education students.