

Skill Development

Teaching Games for Understanding (TGfU) Resource

Teaching Games for Understanding (TGfU) is a useful approach *for all coaching communities* that enhances skill and technique and transfers practice into competitive-like situations. TGfU was originally developed by Rod Thorpe and David Bunker and has been studied, adapted, and published as other names (i.e., Game Sense and Play Practice). Though all have slight differences, the principles of learning through playing meaningful games are the essence to all approaches. Appendix 1 provides some samples of games at various coaching community levels.

Games set realistic problems in practice for athletes and coaches to solve. The idea of TGfU is for coaches to develop purposeful games so athletes can enhance performance through intrinsically motivating activities that involve decision-making and tactics. Coaches design practice sessions that are real to the competition itself, so athletes learn in a competition context.

TGfU challenges the traditional training program (see Table 1) where the game is often saved for the end of a training session (and often used as a reward for good behaviour). Instead, purposeful games are the essence of the training program. TGfU is an approach that enables athletes to learn about the game and practise skills and technique within the context of a game rather than separate from it. Learning in context provides a sound understanding of the game and better opportunities to apply skill, technique and decision making (a skill that is consistently considered desirable for athletes).

While a TGfU approach can apply in *all coaching communities*, the games will differ according to athletes' needs and characteristics. For example, a tag game may be used for *Middle Childhood athletes as a way to develop space*. The same tag game can be used for *Competitive Adult athletes* to work on a particular tactical situation.

For individual sports, coaches use the same concepts of TGfU, but adapt the model to meet the needs of the sport and their athletes.

Table 1: Traditional vs. TGfU Model

Traditional Model	TGfU Model
<ul style="list-style-type: none">- warm up- skill practice- drills- minor game/game practice- cool down	<ul style="list-style-type: none">- warm up- purposeful game- how can we do it better? (tactical, perceptual, decision making, technical)- back to the game- progression(s) of the game (additional challenges)- repeat the cycle using the progressive game(s)- cool down

TGfU is a model that fits well within the athlete-centred approach. When athletes are allowed to play or practise, uncluttered by coaches telling them what to do and where to go sessions tend to be more productive in terms of learning in context and enhancing motivation through challenges. The sessions provide mental preparation, sport specific fitness, social interactions and decision making opportunities. If you watch a group of children on the playground, they seem to enjoy their time and all are involved and participating. They design their own rules and nobody stops to tell them what to learn. They learn for themselves. The great message to adults is that children/athletes can learn and participate without continual coach interruption.

A coach is still very important, but his/her role should be to design meaningful games that contribute to athletes' learning and enjoyment and provide the learning opportunities through feedback (mostly intrinsic) and questioning. When implementing the games, a coach's role is to make decisions on how to adapt the game, or what questions to ask the athletes so they can learn about a particular aspect of their performance. The ability to take this role is the 'art of coaching'. The 'art' is designing purposeful games that work on options and situations according to the needs of the athletes, and knowing when to

stop and problem solve with the athletes and when to just let them continue, so they learn on their own. Rod Thorpe emphasised this 'art':

When speaking to coaches, I often use the phrase, 'You can play games well/badly'. What I mean is that I watch people with relatively poor techniques totally engrossed in [playing] a game of badminton. They have good tactical understanding, are totally absorbed, dash about the court and leave the session satisfied and want to come back next week. So? The toughest call for a coach is to decide 'not to do anything'. I know I could make them better players, but is it the right time to step in? Will I have enough time to ensure that my input will be positive? The coach who steps in and explains what a player is doing wrong, or shows a 'better' way is having a very negative effect if they do not have the time to spend or the player does not have the ability to incorporate a lasting improvement into their 'fun' game. This said, some would argue that the traditional lessons that do this are not well taught which results in poor responses to lessons by children, rather than the approach [as such] being incorrect (Kidman, 2005, p. 236).

Well-structured games are designed to provide options that help athletes arrive at tactical understanding for themselves. Through games, athletes share success and failure, they learn how to trust each other and to know each other's 'ways' of competing and making decisions, thus enhancing team culture. Achievement is also enhanced as TGFU enables athletes to do something well, to problem solve, and take ownership for their own learning. Enjoyment is enhanced because games are fun.

Technique and Skill

Technique is defined as the basic movement pattern(s) needed to perform. Skill is the ability of the athlete to use physical technique and apply it to various situations. A volleyball player can be the best spiker (technique) in the world, but his or her ability to use the spike in different tactical and environmental situations determines the skill of the spiker. To be great performers, athletes must have good technique and good skill. A coach's role in enhancing skill and technique is to provide opportunities to practise in match-like situations that transfer into the competition itself.

When introducing TGfU to coaches, a comment that is often heard is, 'Well where is the technique practice, doesn't this approach encourage incorrect technique?' The answer is that the technique is developed through the games. Technique is practised, understood within the game context, then worked on individually (or in groups) as the need arises. Individual technique learning can hence occur while the remainder of the group continues to participate.

In TGfU, athletes are still encouraged to learn the fundamentals (techniques) of the sport, but are provided with interesting ways to practise these fundamentals through games. Athletes want to understand and play the game better and thus are motivated to learn the skills or techniques required. There are many examples of athletes who are motivated (at many ages) by the game, spending time perfecting the skill or technique on their own and outside of training time.

According to skill acquisition theory, it is evident that game-centred learning helps athletes to learn skills using variable practice, which enhances memory retrieval of skill and technique. Coaches who have isolated skills or techniques from the game, often make comments like, "why can't you apply that to competition? We just spent an hour practising that skill?" Isolated practice of skill and technique might work well in one practice, but because of the lack of variety or contextual interference (i.e. lack of variety in the way the skill is applied or is able to be adapted to different situations), the learning may not be carried into the next practice, or the longer term, or transfer to competition.

For athletes to learn skill or technique, coaches need to have an ability to observe and analyse (Module 3 in the Self Development Learning Area) and then provide appropriate feedback (Module 1 in the Coaching Process Learning Area) for the situation. Some of the challenges faced when observing and analysing are how to observe execution of movement, knowing what to look for, where to look from and finding the best ways to help athletes enhance skill or technique. There is much to observe and analyse and many environmental factors, such as the mood of the athlete, the weather and the state of the facilities and equipment, may influence athletes' performances (Constraints approach - see Module 3 of

the Self-Development Learning Area). Often instant decisions must be made as to how to change the game/activity or how to make it easier or harder, so that the athletes can learn more efficiently.

TGfU is also a beneficial approach for physical fitness and dealing with pressure. The designed games are often enjoyable and fun and, as athletes want to play them, the intrinsic motivation is high. This intrinsic motivation often means that athletes play their games with intensity, so that specific sport fitness is an outcome.

As for pressure, the games are often set up to mirror competition. The intensity and the scoring systems contribute to the athletes working in pressure situations. The nature of the games provides situations where athletes have to make decisions under pressure. This practice in pressure situations provides some transfer into real competition. The situations that are practised and learned through TGfU obviously depend on the *needs of the athletes in the particular coaching community*.

Self-awareness through TGfU

After receiving intrinsic and extrinsic feedback in a game, the athlete must then sort the information and evaluate their performance compared with an 'ideal model'. Developing an athlete's self-awareness is important in providing a source of internal control rather than the athlete depending on external sources (e.g. you the coach) to evaluate the performance and tell them what to do. The ultimate athlete is one who is independent and has personal responsibility because of he/she owns his/her performance.

Athletes may not have all the information about a situation, so it can be difficult for them to evaluate the feedback and make the appropriate decisions. The coach can assist this process by asking questions that encourages self-awareness of the required performance at a level that the athlete can understand.

One of the major limitations to performance improvement is the ability of athletes to make sound and appropriate decisions. By giving athletes opportunities to decide for themselves how or what to do to fix their own errors or identify a correct performance, the coach enables the athletes to practise and improve their decision-making processes.

Some tactical understandings for both team and individual sports, that can be learned using TGfU include; deception, risk (which option?), shot selection and placement in relation to opponents, time (when will you?), stage of the game/competition, space (where is?), decision making, field settings, defensive patterns, minimising angles of attack, attacking patterns and keeping possession. In individual sports these often translate to making decisions like when and how hard to surge, when to hold, when to 'draft', when and how to cover, etc.

Some mental preparation that can be worked on through pressure games are arousal, concentration, motivation, communication and confidence (gained through success).

Selecting a Game to Work on a Skill

In selecting a game, coaches need to consider the following:

- What are the stages of learning and growth and development of each athlete?
- What skills are important for athletes to learn to have success, to have fun and to be safe in your sport? (Tactical, physical, mental, decision making)
- What are the basic movements that underlie these skills?

Ways of Teaching a Skill through TGfU

The philosophy of New Zealand's coach development is based on creating athlete responsibility and awareness. In discussing TGfU, it is important to consider some of the skill acquisition concepts that contribute to athlete skill development. For further 'traditional' skill development concepts which might apply to individual sports, see *The Principles of Coaching, Level 1*, pp. 59-68.

Whole or Part Learning

A skill may be taught in its entirety (whole learning) or broken down into parts (part learning). To enable long term learning, it is important to teach the whole (as TGfU does), then enable the athlete to be aware of the parts that he/she needs to work on (using coachable moments to help athletes during game play).

Chaining

This involves breaking a skill down into progressive part teaching. Each part is taught and practised on its own and the parts are added in their correct sequence. Chaining is adopted when a skill is complex and needs to be taught in a particular order. A good example of chaining is in gymnastics when athletes are preparing routines. The emphasis of chaining is learning in a progressive order. In TGfU, coaches would generally not need chaining as athletes are discovering for themselves, the way they need to apply the skill.

Massed or Distributed Practice

Massed practice is where the coach has their athletes continuously practise a skill without any breaks until the skill has been learned. In a distributed practice, the athletes may learn the skill in short, frequent practice sessions interspersed with rests or alternative skill activities. Massed practice is more suitable for highly skilled or highly motivated athletes.

Distributed practice is the most effective for improving performance particularly with younger athletes, as breaks between sessions reduce boredom and recharge the athletes' energy and powers of concentration. TGfU is a great example of distributed practice.

Blocked vs Random

Blocked practice is comprised of repetitive drills, whereby athletes have a number of turns at doing a skill, e.g. Pass to your partner ten times. Blocked practice is known to have limited transfer into the actual competitive situation, but can be used to practise a technique that needs some work.

Random practice is like variable practice. In random practice, athletes practice various techniques randomly. In TGfU, all techniques and skills are practised randomly because athletes must respond to others' movements. In a game situation, every movement is novel (different). No two situations are exactly alike. Athletes have an opportunity to put into their memories many different responses and therefore gain more experiences that they can draw on in actual competitive situations. Variable practice also promotes 'learning from mistakes', whereby athletes can make an incorrect response, correct it and add it to their repertoire.

Mental or Physical Practice

Physical practice of a skill is necessary for improved skill performance and is what most athletes are accustomed to. Mental practice can also be used by picturing the performance in one's mind. This can be done using mental imagery, viewing the performance (live or on video), and reading or listening to instructions. Mental practice is often learned implicitly in TGfU, as athletes increase their concentration because they are focused on an enjoyable task. They are also motivated to learn because of the context of the learning environment. The ability to maintain arousal levels, especially in competitive situations, are actually practised in TGfU games because the game ensures there are pressure situations. A combination of both physical and mental practice makes for the most effective learning (see Module 2 in the Athlete Development Learning Area).

Modelling Skill (Providing a Demonstration)

The purpose of a demonstration is to increase the athletes' understanding of the skill or game by providing an accurate model from which to learn.

For athletes to make appropriate decisions on how to execute skills, coaches need to provide an explanation and a demonstration so that athletes can learn and practise. An effective skill demonstration requires careful planning by the coach. Consider the following:

Why is the Skill/Technique Important?

Understanding the importance of the skill in the context of the sport and competition will assist both the coach and athlete in teaching and learning the skill. By introducing the skill through a game, athletes will determine what is important for that game, take ownership of it and practise it with more intensity because they 'want' to improve. TGfU allows for progressive development of skill/technique, tactical and mental development and decision making within a game setting.

How Will the Skill/Technique be Demonstrated and Explained?

Select an appropriate method of teaching the skill, taking into account the type of skill and the experience and ability of the athletes. Generally, it is recommended that the whole skill be demonstrated first to show the athletes what the skill will look like when performed correctly. Let them try first, observe their execution, then break down into various skill components if needed and let them put the whole skill back together again (whole-part- whole).

Remember athletes need to be able to observe the demonstration at different angles. Show both left- and right-handed ways to execute the skill.

Make a note in your session plan of two to three teaching points and some key words or phrases to use to emphasise important parts of the skill. Keep the instructions simple and avoid the use of jargon where possible. Athletes should be asked to concentrate on only one or two aspects of the skill at any one time.

Who Will Demonstrate the Skill?

It is important that whoever is chosen to demonstrate can perform the skill correctly. Coaches will often demonstrate skills themselves, but they can also use athletes, sports persons from outside the team, or even use videotapes to demonstrate. Modelling a skill by someone who the athlete has 'connections' with will enable the athlete to choose how they might want to perform that skill.

Choose athletes with a range of skills to demonstrate. Asking the 'star' of the team to demonstrate all the time can be discouraging for the less skilled and the learners. For most athletes, being chosen to demonstrate is seen as a reward for good performance. Be aware however, that some athletes find this embarrassing – as a coach you should respect their feelings.

How Will You Know the Athletes Understood the Demonstration?

The best approach would be to let them try the activity first. Other approaches may be to ask specific questions after the demonstration has been given. Avoid simply asking "Did you understand?" as athletes tend to nod a yes response whether they think they understand or not. Ask specific points about the demonstration and get the athletes to 'show you' what they have learned. Their responses to questions and the way they perform the skill will tell you whether they understood or not.

If an athlete has not understood the demonstration or, after a series of sessions they have not yet grasped the concept, it is up to the coach to modify the information and/or the coaching method to assist the athlete's understanding. Everybody learns differently and it is one of the coach's roles as a teacher to find a teaching method that suits the athlete's learning. Some may need the skill to be broken down further.

Implementing TGfU

Rod Thorpe (Kidman, 2005, p. 238) was asked about how to implement TGfU:

Start small. You will have a well-trying coaching model in your head from your previous experience as a coach and very powerfully from the way you were coached. See if you cannot introduce elements into your sessions in which you give more freedom to players. We are all familiar with conditioned games (e.g. 3v3 or 4v2). Choose one, but instead of diving in and telling the players how to exploit this, let them see what they can do. In a conditioned team game take out two key players from one side. Let both sides work out how to cope. It's only a five-v-three game, but let them work it out. Set a timed two-minute game, let them work out a scoring system that is fair; e.g. the three person side gets five points for a goal or try, the five person side gets one point. In a game of badminton or tennis, put 'no go' (for tennis ball or shuttle) zones on the court, let's see how they cope.

We have all done it, but what we usually do is select the activity that allows us, the coach, to 'tell' the players what we want them to do. The major difference is that we help them work out what they have to do to exploit the situation and this means 'questioning' either verbally or by setting a new condition in the game.

Play small-sided games, but select those [games] that allow you to observe decision making. Get used to trying to see what the player is basing the decision making on, watch the opponents first and then see if the response is correct, rather than only watching your player. We do it when analysing matches; do we do it enough in practice?

Summary

- TGfU gives meaning to skill development because development is done within the sport's authentic context. For example in cricket, only 4 people are involved with the ball at any one time, so others need to make decisions off the ball. Often in training we only work with the ball.
- TGfU creates independent athletes – not athletes that are reliant on the coach.
- TGfU increases motivation and enjoyment.
- In TGfU, the coach sets up the environment to maximize learning but uses a less explicit approach by standing back more often and enabling athlete to learn through participation in the game.
- TGfU enhances long-term learning.
- TGfU enhances sport specific fitness.
- TGfU follows the theories within skill acquisition.
- TGfU enables athletes to practise under pressure.

Reference:

Kidman, L. (2005). *Athlete-centred Coaching: Developing inspired and inspiring people*, Christchurch, NZ: Innovative Print Communications.
www.playsport.net

Appendix 1: Format of TGfU Games

For this section, NSOs will need to provide examples of games specific to their sport. Please note, it is difficult to provide a resource for games, as the games need to be designed according to the situation that presents itself to a particular team at a particular time. The game should be developed around that need. The format for designing a TGfU game is listed below. Coaches:

1. Define the purpose of Game. (The game is designed around the situation that needs to be worked on with that group/team/individual).
2. Design the game itself - rules, scoring, playing boundaries, number of players, equipment
3. Prepare modifications/progressions:
 - Break down or change the rules
 - Increase or decrease number of participants
 - Increase or decrease distances or the size or shape of the playing area
 - Modify or use alternative equipment
 - Use timing, handicaps, scoring, balance of team numbers e.t.c. to increase or decrease chances of success according to the purpose of the game
 - Include skill progressions
4. Prepare helpful questions to use in coachable moments.

Examples are provided in the different TGfU themes which are Net Games, Invasion Games, Target Games and Striking Games. Example from individual sports are provided in the form of ideas rather than detailing all consideration required to apply the game.

Net Game: Volleyball, Badminton, Sepak Takraw, Tennis, etc

TGfU example for Late Childhood/ Early Teenage Coaching Communities

Purpose

To put the 'ball' on the opposing team's floor (offensive work)

How to play

Situation: Two 'small' games can be played on one court at the same time, one on the left and one on the right side of the court.

Players: In each game there are two players per team on either side of the net.

Rules:

- One ball for each game. Service starts by throwing ball over the net.
- Basic volleyball rules apply. No spiking, only passing or setting.
- Every time the ball hits the floor the play starts again from the service throw. The side that puts the ball on the opposing team's floor serves.

Possible questions to promote athlete problem solving (depends on coaching community):

- What did you look for to get the ball to hit the opposition's floor?
- Where were opposition players when you returned the ball over the net?
- What could you do to ensure you hit the ball to open space?

Possible progressions/modifications

- Include scoring.
- Increase the court size.
- Play only stops when the ball hits the back (or front) of the opposition's court.
- Allow them to spike.

Invasion Game: Rugby, Soccer, Basketball, Hockey, Netball, etc)

TGfU example for Early/ Late Teenage, Social/Competitive Adults Coaching Communities)

Purpose

- Passing skills, evasion, decision making, spatial awareness or risk taking (depending on needs of the group)

How to play

- Players work in threes – two attackers and one defender.
- The defender stands in the middle of the grid, with the attackers at one end.
- The attackers attempt to get past the defender and score a touchdown (goal) at the other end.
- Attackers may pass the ball as often as they like.
- If the defender stops a touchdown (goal) from being scored they receive 1 point. The defender remains in the middle and continues to score points until a touchdown is scored.
- When a touchdown (goal) is scored, the scorer moves to the middle to become the new defender.

Possible questions to promote athlete problem solving

Attackers

- When should you run yourself and when should you pass?
- After you pass the ball what should you do?
- How can you move the defender to where you want them?
- How can you evade the defender?

Defenders

- Should you try for the 'touch' on an attacker, or go for an interception of the ball?
- How can you reduce the time and space available to the attackers?

Possible progressions/modifications

- Add a second defender
- Stipulate a minimum number of passes the attackers must make
- Change the width of the grid.

Diagram



Target Game: Bowls

TGfU example (from www.playsport.net) for Middle/Late Childhood Coaching Communities

Purpose

- Aim and accuracy

How to Play

- One partner stands approximately 10m away and sets up four pins in a self-selected pattern.
- Player with the pins tells their partner which target to hit.
- The thrower rolls the ball towards the selected target.
- If a pin, other than the pre-selected one is knocked down, raise it up again until the selected one is hit.
- Once the designated pin has been hit, select another pin to be the target.
- Count the number of balls rolled to hit all four targets.
- Switch roles when all four targets have been hit.

Possible questions to promote athlete problem solving

- How should the ball roll to knock over the pins?
- What could you do to get those pins at the back?

Possible progressions/modifications

- Use a ramp to roll the balls down.
- Decrease the number of targets to hit.
- Decrease the distance from where the players roll the balls to the 4 targets.
- Players can use two hands instead of one hand to roll the balls.

Variations

- Two Pin Knock Down: The bowler must knock down two targets in one roll (may need to reduce the distance rolled).
- Curling Knock Down: Instead of using a ball, use a scooter board like a curling stone to hit the target(s).
- Hockey Puck Knock Down: Use an ice hockey puck to slide along the floor to hit the targets.
- Obstacle Knock Down: Put an obstacle in front of the targets to change the angle of approach or make the bowler have to spin the ball so that it moves around the obstacle.
- Competitive Knock Down: Assign three distances from the targets. The closest distance is worth 1, the middle distance 2 and the furthest distance 3 points. Participants can then choose the line they wish to shoot from. Use alternate shots with the first one to 20 points declared the winner.

Strike Game: Softball

TGfU example for *Late Childhood or Early/Late Teenage or Social Adult Coaching Communities*

Purpose

To determine available spaces and take risks to score runs.

How to Play

A fairly large rectangular field, with set out boundaries is needed. Use one bat, three tennis balls, and two markers (set out to have a running between bases type area). Coaches can use home to first base as a suitable running area.

- Two even teams are picked (keep groups smallish; no more than 4).
- Using tees (for younger athletes) or have the athlete throw the first ball into the air and hit it into the playing area. They repeat this for all three balls. (The fielding side can chase the ball as soon as it is hit).
- Once the balls have been hit, athletes run to first base and back to home as many times as they can until all balls are returned to the batting area by the fielders.
- The fielders retrieve all the balls and return them to home base as quickly as they can.
- The batter scores points, 1 for each time he/she runs between the bases. If a ball is caught or tagged before making a base, the batter loses 2 points.
- Swap batters until each team member has batted once and then swap teams, so the batters go into field and fielders comes in to bat.

Possible questions to promote athlete problem solving

Batters

- Where can the balls be hit to allow for more time to run between the bases?
- How do you know whether to try for another run?

Fielders

- How can you ensure that the all the balls hit are fielded and returned in the quickest way?
- Where are you best to position players to achieve this?

Possible progressions/modifications

- Don't let fielders run until the last ball is hit (different tactics may be required).
- Increase or decrease space between bases.
- Add more or take away team members.
- Make the fielder bigger or smaller.
- Award points to batters who hit in certain areas.
- Narrow or widen the field area.

Individual Sports

Tactical awareness

Create situations where athletes have to solve the tactics or competition plan. For example, in a 400 meter freestyle race, how fast would your 1st, 6th and 8th lap be? Work out a time as a goal.

Decision Making

These sorts of understandings can be learned when a competitive environment is set up and athletes need to make decisions about risk, distance or skill/technique in particular situations, etc. For example, in kayaking, a course is set up, markers set out and the kayaker has aim to reach each marker in a particular time. According to the time the kayaker passes the mark, do they change stroke patterns or keep the same? Or what cues could the kayaker use for motivation if they are ahead of or behind schedule?

Mental preparation

Individual sports could provide real-life contexts where athletes are more motivated to understand their performance. (The last kayaking question above illustrates this as well as decision making).

Example for Golf: (from Peter Mattson www.sgf2.golf.se/pdf/idrott/exam2)

For Late Teenage, Social/Competitive Adult

Purpose

Get the ball into the hole with as few strokes as possible (the short game)

How to Play

- One person selects an impossible shot 60 metres from the hole.
- Players work in pairs and the one with the least number of shots scores 1 point and selects the next lie.
- The first person to 3 wins.

Possible questions to promote athlete problem solving

- What club might you use to take a shorter shot?
- What were you looking for to determine how the shot should be played?
- What skills have you found that you need to work on in your short game?

Possible progressions/modifications

- Select impossible shots further or closer to work on various parts of the game.
- Partner chooses club to use for the shot.
- 9 holes group strategy where a group of 4 players plays 1 ball against another group of four players with 1 ball. Each player takes a turn for their team, but the team decides which club and shot is to be played.