RUNNING HEAD: Teaching Games for Understanding

The Inclusion of Optimal Challenge in Teaching Games for Understanding

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Biography

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2   The area of physical education is rich in ideas pertaining to pedagogical principles and

3   theoretical models that are intended to improve the quality of teaching practices. Despite these

4   advances, the vast amount of information often seems overwhelming and sometimes irrelevant in

5   terms of its application. In this paper we identify strategies that embrace the psychological

6   construct of optimal challenge as a principle to enhance children's intrinsic motivation in

7   physical activity environments. The construct of optimal challenge will be introduced in the

8   games dimension, utilizing the Teaching Games for Understanding framework (TGFU) (Bunker

9   & Thorpe, 1982). While a variety of teaching styles may be incorporated into this framework, we

10   highlight the usefulness of the inclusion style (Mosston & Ashworth, 1986) in the promotion of

11   optimally challenging physical activity.

12   In order to maximize learning and motivation, instructors should attempt to structure an

13   environment that is optimally challenging for all individuals. That is to say, a child's perception

14   of the challenge of the activity should be equal to the perception of his/her skill level or abilities

15   (Reeve, 1996). Activities where skill and challenge are not balanced can lead to boredom or

16   anxiety. For example, if a highly skilled and competent tennis player were to play against

17   someone who has never played tennis before, it would likely be quite boring for the experienced

18   player and quite frustrating for the novice player. Optimal challenge has been suggested as an

19   important construct by leading intrinsic motivation theorists (e.g., Csikszentmihalyi, 1990; Deci

20   & Ryan, 1985; Harter, 1978; Weiss, 1991), but has received relatively little attention in physical

21   education research. Essentially, when participants experience success at optimally challenging

22   activities their perceived competence increases, which in turn enhances their intrinsic motivation

1 towards the activity. As a result children are often much more motivated to take part in the

2 activity and are excited to do the activity again once it has ended.

3 A number of recently developed physical education curricula have stressed the

4 importance of including developmentally appropriate activities (e.g., Alberta Learning, 1999;

5 B.C. Ministry of Education, 1995). The notion of developmental appropriateness fits well with

6 the construct of optimal challenge. Developmentally appropriate activities are optimally

7 challenging in the sense that they take into consideration what is both age and individually

8 appropriate and then develop activities which are matched to these abilities (Bredekamp, 1992).

9 To facilitate the notion of developmental appropriateness, instructors do not have to

10 develop a separate lesson plan for each learner in the class. The use of various types of teaching

11 styles and classroom management strategies can help foster individuality. One teaching style that

12 may help to encourage individualized tasks is the inclusion teaching style proposed by Mosston

13 and Ashworth (1986). Using an inclusion teaching style, instructors structure activities in a

14 manner that increases the likelihood that every learner will experience success. For example, to

15 increase the chances of everybody scoring baskets, an instructor could allow the learners to

16 choose the height of the hoop, distance from the hoop, and/or diameter of the hoop to ensure they

17 can successfully put the ball into the net. The classic representation of the inclusion style is the

18 "slanty rope" idea (Mosston & Ashworth, 1986). Rather than asking children to jump over a rope

19 at a height set by the instructor, the rope is slanted at an angle, thus giving children a variety of

20 different heights to choose to jump over. Each child can chose their point of entry (which height

21 to jump over), ensuring each child can be included in the lesson. If the rope were not slanted, the

22 height would be too easy for some children, while others would experience no success. We

23 recommend taking the inclusion teaching style concept a step further than Mosston and

1   Ashworth (1986) proposed, and suggest that the style be aligned with the concept of optimal

2   challenge. We propose that instructors who want to optimally challenge their students using the

3   inclusion style should encourage students to choose an entry level that is just right for them (i.e.,

4   not too easy, but not too hard). Previous research has demonstrated that when provided with a

5   choice, children and adolescents will tend to choose activities where they perceive their skills

6   and the challenge of the activity to be balanced (Chalip, Csikszentmihalyi, Larson, & Kleiber,

7   1986). This is likely due to the highly motivating state and benefits of optimally challenging

8   activities.

9   The integration of optimal challenge in the games dimension fits nicely with the TGFU

10   approach. Although the origins of the approach dates back to the mid 1960's (Werner, Bunker &

11   Thorpe, 1996), the concept is still a fairly new one in many North American elementary and

12   secondary schools. The TGFU approached was first introduced at Loughborough University, UK

13   in response to concerns that children were leaving school with: (a) little success due to the

14   emphasis on performance; (b) knowing very little about games: (c) some supposed skills, but in

15   fact possessing inflexible techniques and poor decision making capacity; (d) dependence upon

16   the coach / teacher to make decisions; and, (e) little development as thinking spectators and

17   knowing administrators (Bunker & Thorpe, 1982). The 'curriculum' model that developed was

18   one in which learners started off playing a modified version of the game first in order to develop

19   game knowledge and skill proficiency within the modified game.

20   At the centre of the TGFU model (see Figure 1) is "the learner". That is to say that

21   throughout all steps of the model, the learner's needs and developmental characteristics should be

22   the most important consideration so that the tasks the learner takes part in are appropriate for

23   her/his capabilities. The first step in the model (the game) is designed to foster an understanding

1 of game form. At this stage, the game may be a modification of a formal game, but should have a

2 specific objective and reflect an understanding of concepts, skills and abilities pertinent to a

3 category of games. Griffin, Mitchell and Oslin (1997) proposed four types of game categories:

4 (a) target; (b) net and wall; (c) fielding and run-scoring; and, (d) invasion). Target games are

5 games in which: "… the performer propels an object, preferably with a high degree of accuracy,

6 at a target" (Griffin et al., 1997, p. 9). Net and wall games involve: "… propelling an object into

7 space so an opponent is unable to make a return" while fielding and run-scoring games require

8 participants to "… strike an opponent so it eludes defenders" (Griffin et al., 1997, p. 9). Finally,

9 invasion games are: "… games in which the goal is to invade an opponent's territory to score"

10 (Griffin et al., 1997, p. 9). The second stage is the development of game appreciation. Learners

11 should develop an appreciation for the rules of the game and their significance of how the game

12 is played. The next step of the model is tactical awareness. By participating in game-like

13 scenarios, learners develop an understanding of important offensive and defensive tactics that

14 assist in gaining an advantage over their opponent. After developing an awareness of important

15 tactics, learners begin to understand and make appropriate decisions within the game context.

16 This is stage 4 (making appropriate decisions) where they use their knowledge they have

17 developed through game appreciation and tactical awareness to know when and how to execute

18 certain tactics within the game. Having gone through this process, learners will then realize the

19 importance of proper skill execution and hence will have a context from which to develop and/or

20 refine their current skill level. They should have realized why the skill is important, as well as

21 how to it can be implemented in a game. The final step of the model involves applying the

22 previous steps through performance. Instructors play a major role at this step in providing

23 feedback to the learner regarding her/his execution of the skills previously introduced.

1   Thorpe, Bunker and Almond (1984) discussed the idea that a games curriculum can be

2   developed based on the model coupled with four fundamental pedagogical principles: sampling,

3   modification-representation, modification-exaggeration, and tactical complexity. Instructors can

4   sample different games from the same categories (i.e., target, net and wall, fielding and run-

5   scoring, and invasion), and children can be led to understand similarities between apparently

6   dissimilar games. Games representation is important in realizing children may not be able to play

7   adult formal games, but modified games should contain the same tactical structures of the

8   official game. Exaggeration of certain aspects of a game may enable children to discover its

9   primary tactics (for example, badminton on a long narrow court to recognize the need to open

10   space up front to attack). Finally, in terms of tactical complexity, there is an order in which to

11   introduce games to children. Target games are generally less complex, followed by net/wall,

12   fielding games, and finally complex team invasion games, which should be introduced last

13   (Werner et al., 1996).

14   So far, this paper has provided several pieces of the games puzzle (i.e., teaching styles,

15   TGFU, optimal challenge). How do we go about putting them all together so that we can

16   maximize student learning and motivation? The following section provides a practical example

17   that demonstrates how the inclusion teaching style can be used within the TGFU model to

18   optimally challenge learners.

19   **Putting Theory into Practice**

20   The purpose of the following sequences of modified invasion games is to develop an

21   awareness of the importance of providing support for teammates in order to maintain possession

22   and to score a goal. The activities that are described can be designed for almost any invasion

23   game (e.g., soccer, lacrosse, field hockey).

1 **GAME Activity 1: Target Knock-Down (Bunker & Thorpe, 1982) (see Figure 2)**

2 *Objective*

3 To develop an understanding and appreciation of rules, strategy, and skills in an invasion game

4 *Rules*

5 • Small-sided teams (approximately 4 v 4, about three separate games)

6 • A pin is placed on each team's end-line

7 • Teams are instructed that you score a point if you knock over the other team's pin with a ball

8 • Players are not allowed to dribble with the ball. They must either pass to a teammate or shoot

9 at one of the targets

10 • Gradually ask learners to suggest rules that will improve their chances of scoring.

11 *Commentary*

12   For this first stage, a game is played first to help learners develop an appreciation for

13 rules, strategy and skills needed to play an invasion game. At the moment, the principle of ball

14 possession in invasion sports is being introduced. To keep possession, players have to pass and

15 move around to be open when they do not have the ball. By doing this they will create

16 opportunities to score. While it may not be developmentally appropriate to expect, for example,

17 third graders to understand the abstract tactical concept of creating space, it is appropriate to

18 expect them to understand the need to spread out and pass to try and score goals (Morris &

19 Stiehl, 1999). The instructor can encourage the learners to introduce rules that emphasize these

20 aspects (e.g., have a zone where no defenders can enter around the pin). This will create more

21 chances and hopefully the attacking team will learn to try to draw the defenders away from the

22 best defensive positions.

1   The learners may use their hands or feet to project the ball. If you wanted to focus on

2   soccer, you could introduce the rule feet only, but it is important to wait until they have the

3   understanding of tactically what to do. By asking the learners in each small group (of four) in

4   your class to introduce their own rules you are incorporating inclusive pedagogical principles. As

5   the instructor, you should encourage each group to make their game optimally challenging. For

6   example, in soccer, a highly skilled group could play two touches with a small net, while a less

7   skilled group could play open touch with the whole gym wall as the goal.

8   **GAME APPRECIATION Activity 2: Keep-Away for Points (see Figure 3)**

9   *Objective*

10   • To develop an awareness of the importance of when and how to use width as a strategy to

11   maintain possession and to get close to the opponent's net to create a scoring opportunity

12   *Rules*

13   • In your team of 4, play 2 Vs 2

14   • Create a square; start off playing in a 10 m. x 10 m., but allow learners to change the size of

15   the area if desired

16   • Assign ends

17   • Play a modified game of Keep-Away (i.e., trying to maintain possession within the pre-

18   determined area for as long as possible)

19   • A team receives 1 point if they receive a pass along the sides; 2 points if they receive a pass

20   on the other team's end line. The scoring stops each time the opposition get the ball.

21   • Players can only dribble the ball for a maximum of 5 steps.

22   • After playing for a few minutes, ask each pair to set a goal for the number of points they

23   think they can achieve in two minutes of play (i.e., self-competitive goal for each team).

Key Things for Instructor to Highlight

- Width is a key principle of attacking play in invasion games

- Width pulls defenders away from scoring zones, so should defenders leave the '2 point line' or not?

Commentary

This second activity takes into consideration steps three (tactical awareness) and four (decision making) of the TGFU model. From the general game principle of possession, learners may realize that when they get the ball wide, the defenders come away from the goal so there are spaces in the middle – the area that has the most advantages for the attacking team. Going hand-in-hand with this increased tactical awareness, learners must now make decisions about when to exploit spaces in the middle (and defenders must consider when to leave the middle). The focus here is on decision-making and considering when the chance of losing possession is a suitable risk (e.g., a chance to score 2 points not 1). If learners appear to be making suitable decisions, but their skill execution is poor, the instructor can make a decision to work on certain specific skills. By this stage the learners should have realized why having these skills (such as accurate passing) are important, as well as when and where they should use them in a game.

The activity also encourages the learners to optimally challenge themselves by allowing them to modify the size of the playing area should it be too hard or too easy (a smaller area makes to game more difficult). Learners are also encouraged to try their best by using self-competitive goals (another strategy for inclusion). That is to say, the goal is not to score more points than the other team, but rather, to beat your own score from the previous attempt. Learners may still compete with each other, but the instructor should make an effort to try to emphasize improvement, not outcomes. For example, do not ask "who scored the most points?" but rather,

1 "who reached their goal?". Those who easily reached their goal can be encouraged to challenge

2 themselves more, while others may have set their goal too high. Focusing on one's own goals

3 reduces the amount of negative comparison between participants and allows each pair to achieve

4 a reachable goal. For example, if a relatively inexperienced pair plays against a more

5 experienced pair, they may set a goal to try and score at least two points while limiting the more

6 experienced pair from scoring more than six points.

7 **GAME PERFORMANCE Activity 3: Self-Target Knock-Down (see Figure 4)**

8 *Objective*

9 • To provide learners with an opportunity to incorporate previously learned concepts in a game

10   situation.

11 *Rules*

12 • Play 4 Vs 4

13 • Each person is to choose a small or medium sized target (e.g., pin, box, pylon, hoop, goal)

14   they are going to try to hit during the game

15 • Each player places his/her target somewhere along the other team's end line

16 • Play original game, but this time, each person has their own target to hit

17 • Allow learners to create their own scoring system. For example, rank each target according to

18   how difficult it is going to be to hit (e.g., a bowling pin is harder to hit than a large traffic cone).

19   Assign a point value to each target whereby the more difficult targets are assigned more points

20   if hit.

21 • Players are not allowed to move with the ball. They must either pass to a teammate or shoot

22   at one of the targets.

1 *Commentary*

2   This final activity comes back to the importance of performing the knowledge learned

3 from the previous activities in a game situation. Learners are encouraged to apply these concepts

4 and the instructor can provide feedback wherever possible. Feedback could be provided to

5 groups and individuals on both tactics and skills that are being performed well or may need

6 further work. This game also fosters optimal challenge in the sense that it uses an inclusive

7 teaching style by allowing each learner to bring his/her own target into the game, enhancing each

8 learner's chances for success. The learner will also likely choose a target that is "just right" for

9 him/her (e.g., appropriate width, colour, height). By allowing learners choice and facilitating

10 their input into the game development they will feel some ownership of the game, which can

11 increase the chances of them liking the activity. The objective of the game has not changed in the

12 sense that each participant is still learning about tactics, making appropriate decisions and skill

13 execution. However, by allowing choice and increasing the chances of success the learner is

14 much more likely to put into practice the many concepts he/she has learned throughout the

15 lesson. With older students, you may be able to play a more formal version of the adult game

16 while still emphasizing the many steps in the TGFU model.

17 **<u>Conclusion</u>**

18   The sequencing of activities provided here was designed to integrate various theoretical

19 perspectives into a practical example. "Theory" may have some negative connotations to

20 practitioners, but many theories are useful in guiding educational practice. Often a breakdown

21 may occur in understanding how such theories can be put into practice. The concepts discussed

22 in this paper (i.e., TGFU, Teaching Style and Optimal Challenge) have all been shown to have a

23 positive impact on children's physical activity experiences. By using these concepts, the chances

1   of children reaping the many benefits of physical activity (e.g., increased intrinsic motivation to

2   participate in habitual physical activity, increased competence, feelings of self-worth, associated

3   mental and physical health benefits) are increased. This paper has attempted to bring these

4   theoretical perspectives off the shelf and into the gymnasium so that students can enjoy the many

5   benefits these approaches can provide.
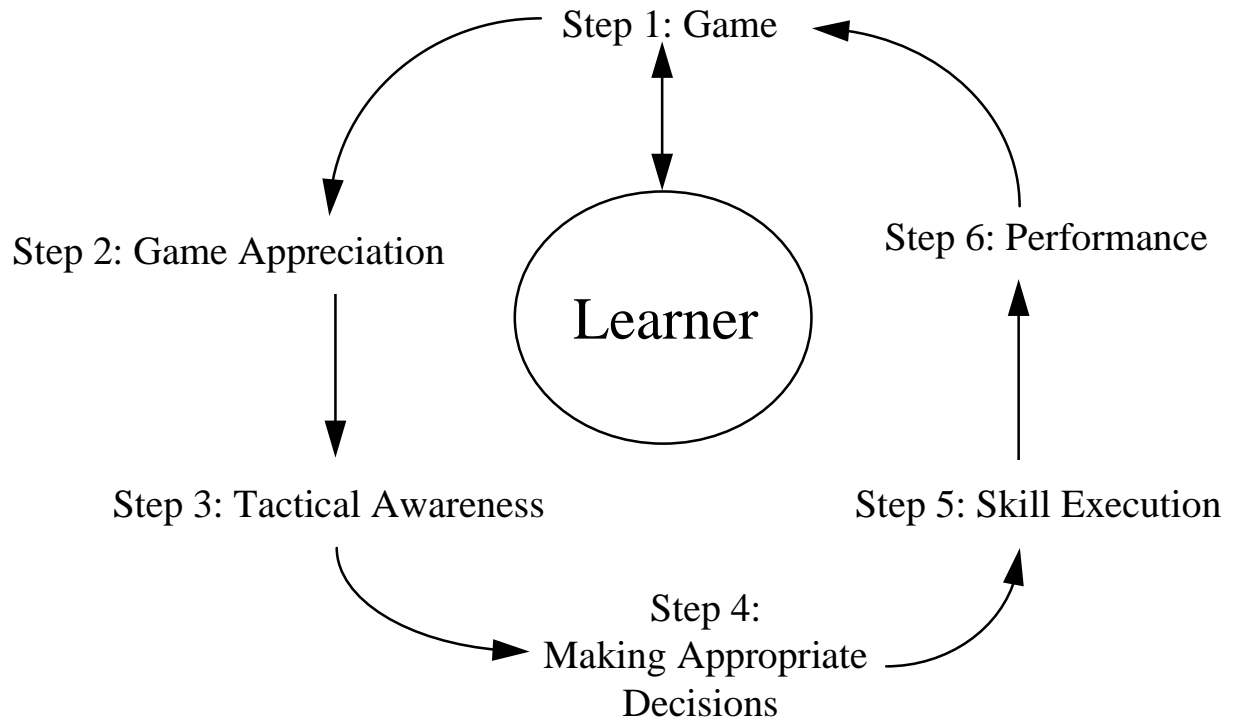
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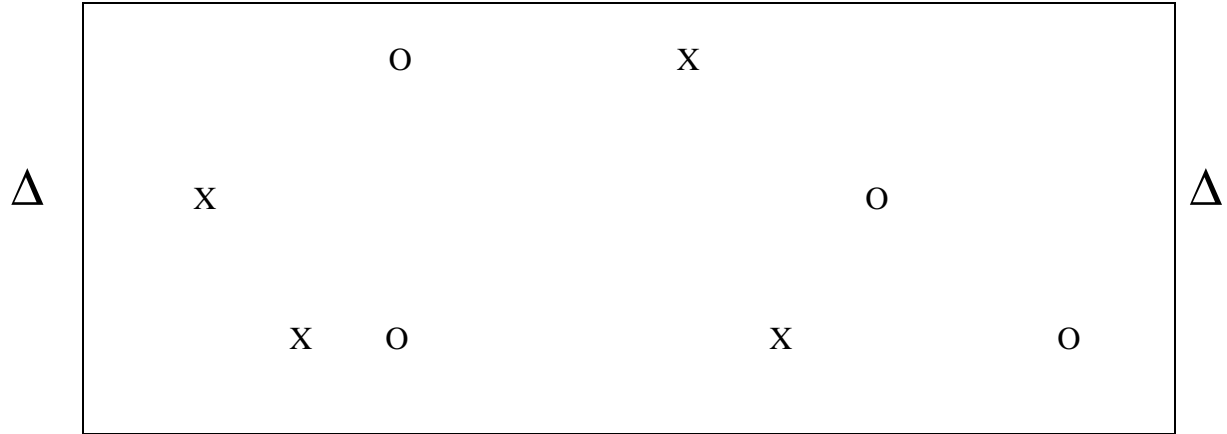
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1   <u>Figure 1</u>. Teaching Games for Understanding Model (from Werner, Bunker, & Thorpe, 1996).

Step 1: Game

Step 2: Game Appreciation

Learner

Step 6: Performance

Step 3: Tactical Awareness

Step 5: Skill Execution

Step 4:
Making Appropriate
Decisions

1

1   <u>Figure 2</u>. Activity 1: Target Knock-Down (Modified Game)

1

Δ

O   X

X

O

X   O   X   O

Δ

2
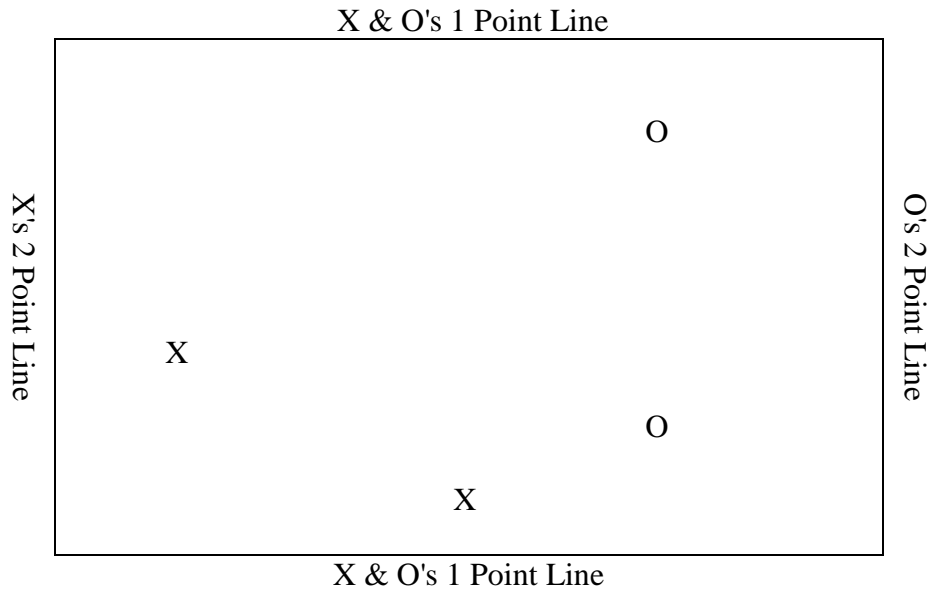
3   Δ = Target

4   X Direction ⟶

5   O Direction ⟵

1   Figure 3. Activity 2: Keep-Away for Points (Tactical Awareness and Decision Making)

1

X & O's 1 Point Line

X's 2 Point Line

O's 2 Point Line

O

X

O

X

X & O's 1 Point Line
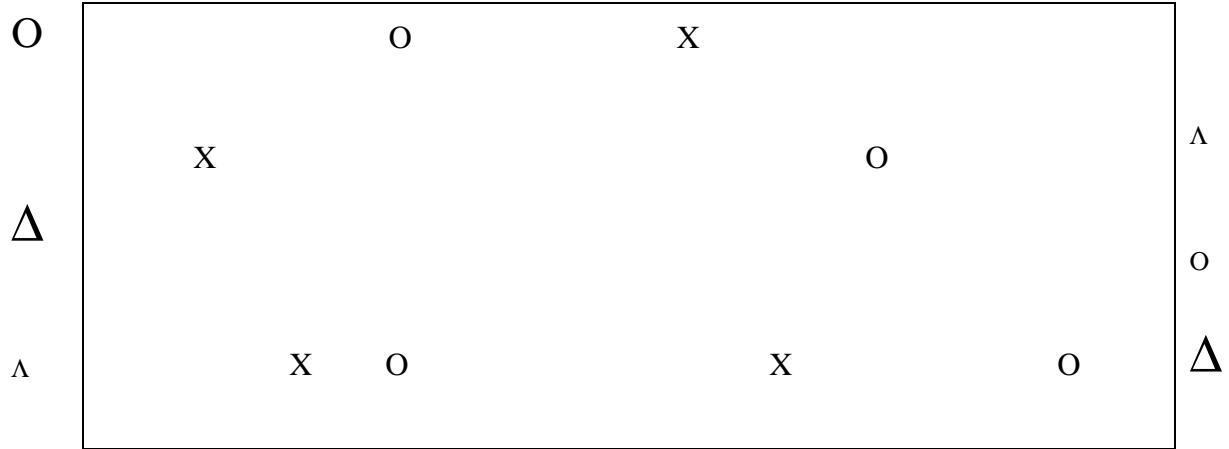
1   <u>Figure 4</u>. Activity 3: Self-Target Knock-Down (Game Performance)

1

O   O   X

                                                                              Λ

X   O

Δ

                                                                              o

Λ   X   O   X   O   Δ

2

3   O,   , Δ, Λ = Self-selected Targets

4   X Direction: ⟶

5   O Direction: ⟵