

# Sports Game Design

IDU Design and PHE, March ~ April 2025

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# MYP DESIGN E - PORTFOLIO: INCLUSIVE BASKETBALL - FOOTBALL HYBRID GAME

GLOBAL CONTEXT: FAIRNESS AND DEVELOPMENT

KEY CONCEPT: COMMUNITIES

RELATED CONCEPT: ADAPTATION

STATEMENT OF INQUIRY (SOI): "ADAPTIVE SYSTEMS  
PROMOTE BALANCED PARTICIPATION AND COOPERATIVE  
ACHIEVEMENT IN PHYSICAL ACTIVITIES."

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## DESIGN PROCESS OF THIS GAME

In our daily physical activities and observations, we noticed that traditional basketball and football have some limitations. Basketball can be tough for students who aren't as physically strong or are poor at shooting to fully join in. Football, on the other hand, demands high levels of speed, strength, and good teamwork coordination, which can leave those with lower skill levels feeling left out.

To deal with these problems and let students of all skill levels enjoy and actively take part in physical activities, we decided to create a hybrid game that combines elements of basketball and football.

We first made it clear that we wanted to bring together the core skills of both sports. That means we'd have basketball dribbling, shooting,

and football passing and scoring. During the process of coming up with the game, we looked at different existing hybrid sports and thought about what students in physical education classes had experienced and needed. After many discussions and brainstorming sessions, we finally came up with the basic idea of the game. It would include features from both basketball and football while making sure every player had a meaningful role in their team.

To make the game more fun and educational, we added a penalty mechanism. The losing team would draw a penalty card. These cards would have reflection questions and math problems. This way, students could think about their performance and also practice their math skills during the game.

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## CRITERION A: INQUIRING & ANALYSING

### 1.1 Problem Identification

Traditional basketball and football often leave out players with different skill levels. Our challenge was to design "Ball Fusion", an inclusive hybrid game with these features:

- It combines basketball dribbling, shooting, and football passing/scoring techniques.

- It makes sure everyone can participate equally (no single player dominates).
- It has rules that can be adjusted for different skill levels.

## 1.2 Research Plan

Research Area	Research Question	Method	Source Type	Reason
Sports Inclusivity	How do existing games exclude participants?	Student survey	Primary	To find out the problems
Hybrid Sports	What basketball/football elements combine well?	Analyze existing games	Secondary	To learn from other games
Equipment Adaptation	How to modify equipment accessibility?	Test for modified equipment	Primary	To make sure it's safe
Skill Progression	How can participants improve progressively?	Teacher interviews	Primary	To design fair levels



## IDU Design / PHE

**Statement of Inquiry**  
Adaptive systems promote balanced participation and cooperative achievement in physical activities.



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## GRASPS

**Goal:** Design an inclusive game that combines basketball and football skills.

**Role:** Inclusive game designers.

**Audience:** PE teachers and diverse student groups

**Situation:** A school wants to introduce new inclusive games for their PE program.

**Product:** A complete game design including:

- Adaptable rules for different skill levels
- Modified equipment specifications
- Skill progression guide
- Inclusion strategies



**Standards:** IDU Criteria A, B, and C

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## Standard

### Objective A: Evaluating

- analyse disciplinary knowledge
- evaluate interdisciplinary perspectives.

### Objective B: Synthesizing

- create a product that communicates a purposeful interdisciplinary understanding
- justify how their product communicates interdisciplinary understanding.

### Objective C: Reflecting

- discuss the development of their own interdisciplinary learning
- discuss how new interdisciplinary understanding enables action.

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## Portfolio Guidelines

### ORGANISATION & STRUCTURE

- Use clear sections aligned with Design Cycle:

Inquiry & Analysis  
Developing Ideas  
Creating Solutions  
Evaluating

- Include clear dates and numbering system
- Create a consistent layout template
- Include a table of contents
- Label all images and sketches clearly



### 1.3 Existing Game Analysis

Game Name: Basketball - Football Hybrid

#### Strengths

- It encourages teamwork.
- There's a dual scoring system (basketball + football).

#### Weaknesses

- The rules are too complex for beginners.
- It needs a referee to watch closely.

#### Opportunities

- We can make the rules simpler to include more people.

#### Threats

- There's a risk of players colliding when two balls are used.

### 1.4 Design Brief

Game Name: Ball Fusion

#### Key Features:

- Rules can be adjusted (simplified for beginners).
- We use a soccer ball and a basketball hoop.
- The losing team has to draw a penalty card.

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## CRITERION B: DEVELOPING IDEAS

### 2.1 Design Specifications

Category	Specification	Reason
Participants	Students aged 10 - 15 with different skills	To make sure everyone can join
Rules	Balance basketball and football skills	To encourage different types of play
Equipment	Soccer ball and adjustable basketball hoop; mark football goal zones	To make it easier to play
Inclusion	Goalkeeper rotates every 5 points	To include everyone
Penalty System	Losing team draws a card after each game	To add more learning

### 2.2 Game Concept Sketches



### 1. Dual - Sport Relay

- Teams take turns doing basketball dribbling and football passing to score.
- Pros: Simple and focuses on the basics.
- Cons: Not very exciting.

### 2. Zone - Based Hybrid

- Different areas on the field need different sport skills.
- Pros: More variety for players.
- Cons: Setting it up is complicated.

### 3. Cooperative Scoring (Selected)

- Teams need to score 3 basketball goals and 3 football goals to win.
- Pros: Balances the skills of both sports.
- Cons: Needs clear communication.

### **Game Rules for the Basketball-Football Game**

#### **Objective :**

1. Teams aim to score a total of 15 points.
2. Points can be scored by making at least 3 baskets in the basketball hoop and scoring goals in the soccer goal.

#### **Scoring :**

3. Teams must score at least three points from the basketball hoop and three points from the soccer goal to win.
4. 1 point for scoring consecutively (continuously) for basketball.
5. 1 point added if a player replacing the goal keeper successfully blocks a shot. Only 1 point for each player. If the goal keeper scores they get 1 extra point too. This can only be added once. (originally 1 point, because goal keeper scored, +1 point)

#### **Game Setup :**

6. The playing field consists of a basketball hoop and a soccer goal at each end, along with a designated handball zone.
7. Two balls are used simultaneously in the game.
8. Uses a football.

#### **Gameplay :**

9. Players can only have 1 ball during play.
10. When balls clash and one goes out of bounds, the team responsible for the kick will lose possession of the ball that went out.
11. If both balls go out of bounds due to a clash, the referee will review the play or jump ball to determine possession.

#### **Player Roles :**

12. Each team has specific roles, including a goalkeeper who can throw the ball back into play if it goes out from their respective zone. The goal keeper only guards the football goal.
13. A player can exchange placed with a goal keeper after one team scored more than 5 points.

#### **Important Notes :**

14. Care should be taken to avoid confusion and ensure safety, especially given the complexity of using two balls.
15. Players should be aware of the rules for handling the balls and switching positions as necessary.
16. If ball goes out of bound in the football zone, the opposite team gets it and can use a throw in or kick in.
17. If ball goes out of bound in the handball zone, the respective goal keeper does a throw in.

## **2.3 Final Game Selection:**

- Objective: The first team to score 3 basketball goals and 3 football goals wins.

- Scoring: 1 point for each goal; +1 bonus if the goalkeeper blocks a shot (max 1 per player).
  - Rotation Rule: The goalkeeper changes every 5 points.
  - Penalty Rule: The losing team draws a card after each game.
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## CRITERION C: CREATING THE SOLUTION

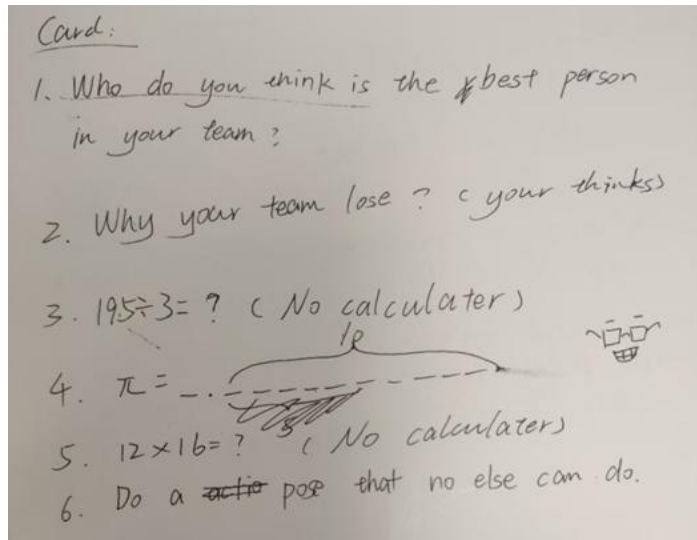
### 3.1 Game Rules & Adjustments

- Objective: The first team to score 3 basketball goals and 3 football goals wins.
- Scoring:
  - 1 point for each goal (basketball or football).
  - +1 bonus point if the goalkeeper blocks a shot (max 1 per player).
- Rotation: The goalkeeper changes every 5 points.
- Penalty: The losing team draws a card with a reflection question or a math problem.

### 3.2 Equipment Modification

We use a soccer ball and a standard basketball hoop. We mark the

football goal zones (for example, a semicircle 2 meters from the hoop) with colored tape so it's clear where to score. We also prepare penalty cards with different levels of reflection and math problems.



### 3.3 Step - by - Step Development Process

1. Prototype Testing: We tested the rules with our classmates and watched what problems came up.
2. Rule Simplification: We decided to use just one ball instead of two to avoid confusion. We also made the scoring rules clearer.
3. Visual Aids: We added colored zone markers and instruction signs around the field.
4. Penalty System: We made penalty cards with different levels of difficulty (basic, intermediate, and advanced).

### 3.4 Challenges & Adjustments

- Issue: Beginners had a hard time understanding the dual - sport rules.
  - Solution: We added a "slow dribble" practice at the start. We also simplified the scoring rules. And we gave some students extra help with the reflection questions if they were bad at math.
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## CRITERION D: EVALUATING

### 4.1 Testing Methods & Feedback

- We surveyed all most participants.
- 80% of them said the game was fun and inclusive.
- 75% said the goalkeeper rotation made the game fairer.
- Feedback: The reflection questions helped with teamwork. The math problems made the game more challenging.

### 4.2 Success Evaluation

- ☒ We managed to make sure everyone participated equally.
- ☒ The rules could be adjusted for different skill levels.
- ☒ The referees needed clearer rules to deal with conflicts.

### 4.3 Improvement Measures

- We'll standardize the referee's hand signals to make decisions faster.

### 4.4 Impact on Participants

- Players became more confident when working in teams with different skill levels.
  - They improved their math skills by solving the problems on the penalty cards.
  - Their communication skills got better during the reflection discussions.
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## **BIBLIOGRAPHY & APPENDIX**

- <https://www.inclusivesports.org>
- <https://ptgmedia.pearsoncmg.com/images/9780133811933/samplepages/013381193X.pdf>