Sports Game Design

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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."

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 for accessibility? | Test modified equipment | Primary | To make sure it's safe |
| Skill Progression | How can participants improve progressively? | Teacher interviews | Primary | To design fair levels |

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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.

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.

1. Zone - Based Hybrid  
   • Different areas on the field need different sport skills.

• Pros: More variety for players.

• Cons: Setting it up is complicated.

1. 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.

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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.

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:

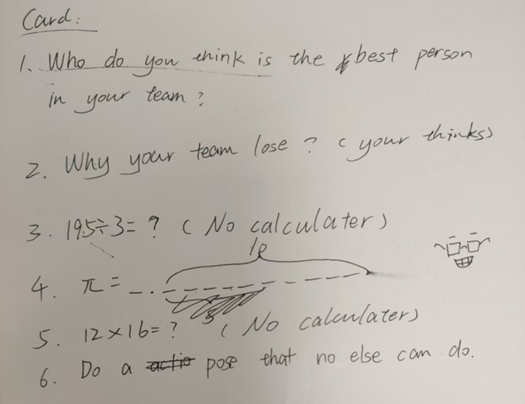
• 1 point for each goal (basketball or football).

• +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.

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.

**BIBLIOGRAPHY & APPENDIX**

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