

Wildfire Command: Guardians of the Greens

An educational role-playing board game (RPG) designed to simulate real-world wildfire management scenarios.

- **Game Concept:**

- Players take on roles such as wildfire fighters, emergency responders, and environmental specialists.
- Goal: Control and extinguish wildfires while managing resources efficiently.
- Victory: All major fires were contained.
- Failure: Critical forest destruction, hazardous AQI levels, or depletion of essential resources.

- **Educational Purpose:**

- Enhances environmental education.
- Develops teamwork, decision-making, and resource management skills.
- Integrates strategic thinking with real-world applications for immersive learning.

Research Questions

1. How can the game improve understanding of wildfire management and conservation?
2. How does it promote collaborative problem-solving and strategic thinking?
3. How can the game be a simulation-based training tool for wildfire disaster preparedness and crisis response?

Development Status

- Currently in conceptual phase—no prototype developed yet.
- Next steps:
 - Develop prototypes.
 - Conduct iterative playtesting.
 - Refine mechanics based on educational effectiveness and player feedback.

Theoretical Framework

- **Kolb's Experiential Learning Theory (1984):**

- **Concrete Experience:** Players engage in wildfire crisis scenarios.
- **Reflective Observation:** Analyze strategy outcomes and explore alternatives.
- **Abstract Conceptualization:** Apply wildfire management principles to gameplay.
- **Active Experimentation:** Test and refine strategies based on past performance.

Integration of Research Studies

1. Enhancing Understanding of Wildfire Management and Conservation

- Sanchiz, Gimenes, & Lambert (2024): Game-based learning improves deep information processing and recall.
- Tsai, Liu, Chang, & Chen (2021): Role-playing games enhance sustainability literacy.
- Arztmann, Hornstra, Jeuring, & Kester (2023): Meta-analysis supports the impact of simulations on cognition, motivation, and engagement.
- Morris (2019): Emphasizes the role of context, inquiry, and reflection in experiential learning.
- Parekh et al. (2021): Board games facilitate environmental learning and systems thinking.

2. Promoting Collaborative Problem-Solving & Strategic Thinking

- Freitas (2018): Educational games foster interdisciplinary learning and cooperation.
- Jabbar & Felicia (2015): Serious games enhance cognitive problem-solving skills, crucial for emergency response.

3. Simulation-Based Training for Wildfire Disaster Preparedness

- Role-playing games help players practice decision-making under pressure.
- Ryan & Deci (2000): Self-Determination Theory (SDT) supports intrinsic motivation through teamwork, autonomy, and problem-solving.

Implications

- School Districts
- Policies
- Research

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