Gamification of Social Behavior Theory Application: A Candy Land Inspired Tool

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BACKGROUND

- Health behaviors include personal attributes, habits, and other choices which impact the health status of the patient.
- Social behavioral theories [SBTs] aim to understand the who, what, why, and how, of health behaviors.
- Gamification of difficult concepts has been shown to improve student comprehension and material retention.

OBJECTIVE

To describe the gamification of social behavioral theories through the development of a candy land inspired tool and evaluate the impact on student comprehension compared to traditional lecture-based methods.

METHODS

- The Candy Land inspired game, "Theory Land" was played for 2.5 hours total, after two separate hour and fifteen-minute lectures.
- Graduate students were paired in groups of two. Teams were assigned to one of four health interventions.
- On a team's turn, they drew a theory card, matched to Candy Land move cards, from selected SBTs.
- SBTs included Health Belief Model,[1] Transtheoretical Model,[2] Theory of Planned Behavior,[3] Social Cognitive Theory,[4] RE-AIM,[5] Diffusion of Innovations,[6] Organizational Readiness for Change,[7] and PRECEDE-PROCEED.[8]
- The team then attempted to apply the card drawn to their assigned health intervention. If the response was sufficient, the team moved forward to the space indicated.
- The first team to reach the end of the Candy Land path won the game.
- Independent t-test was used to compare exam scores to the previous delivery of this content which was solely lecture-based.

SETUP

1. Each team chooses a game piece to represent them on the board.
2. Teams draw an intervention card to determine which health intervention they will apply throughout the game.
3. Shuffle all the cards and place them face down.

EXAMPLE HEALTH INTERVENTIONS

Intervention 1: Community-Based Mental Health Workshops
•**Scenario**: A city observes a rise in mental health issues among its teenage population. Local schools, in partnership with health organizations, plan to run community-based mental health workshops. These workshops aim to provide adolescents with coping tools, stress management techniques, and an understanding of mental well-being.
•**Challenges**: Getting buy-in from schools, training workshop facilitators, ensuring the content is relatable to the youth, and managing potential stigmas associated with attending such workshops.

Intervention 2: Telehealth Expansion in Rural Areas
•**Scenario**: A county with predominantly rural communities has noticed that residents often skip regular health check-ups due to long travel distances to the nearest medical facility. An initiative is proposed to introduce a comprehensive telehealth service, allowing consultations, diagnostics, and even some treatments to be done remotely.
•**Challenges**: Ensuring high-speed internet connectivity, training healthcare providers and patients in the use of the platform, and addressing concerns about the impersonality of digital consultations.

GAMEPLAY

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1. On a team's turn, they draw a theory card and read it out loud.
2. The team then tries to apply the theory card drawn to their assigned health intervention, offering a potential solution.
3. Other teams decide if the player's response sufficiently applied the theory drawn. If so, the team moves forward to the space indicated. If not, they stay in their current position.
4. The first team to reach the end of the Candy Land board path wins!

EXAMPLE WILD CARD
Collaboration Boost
- Pitch a collaboration proposal to another team, incorporating their health intervention.
- If they accept, both teams move ahead two spaces.
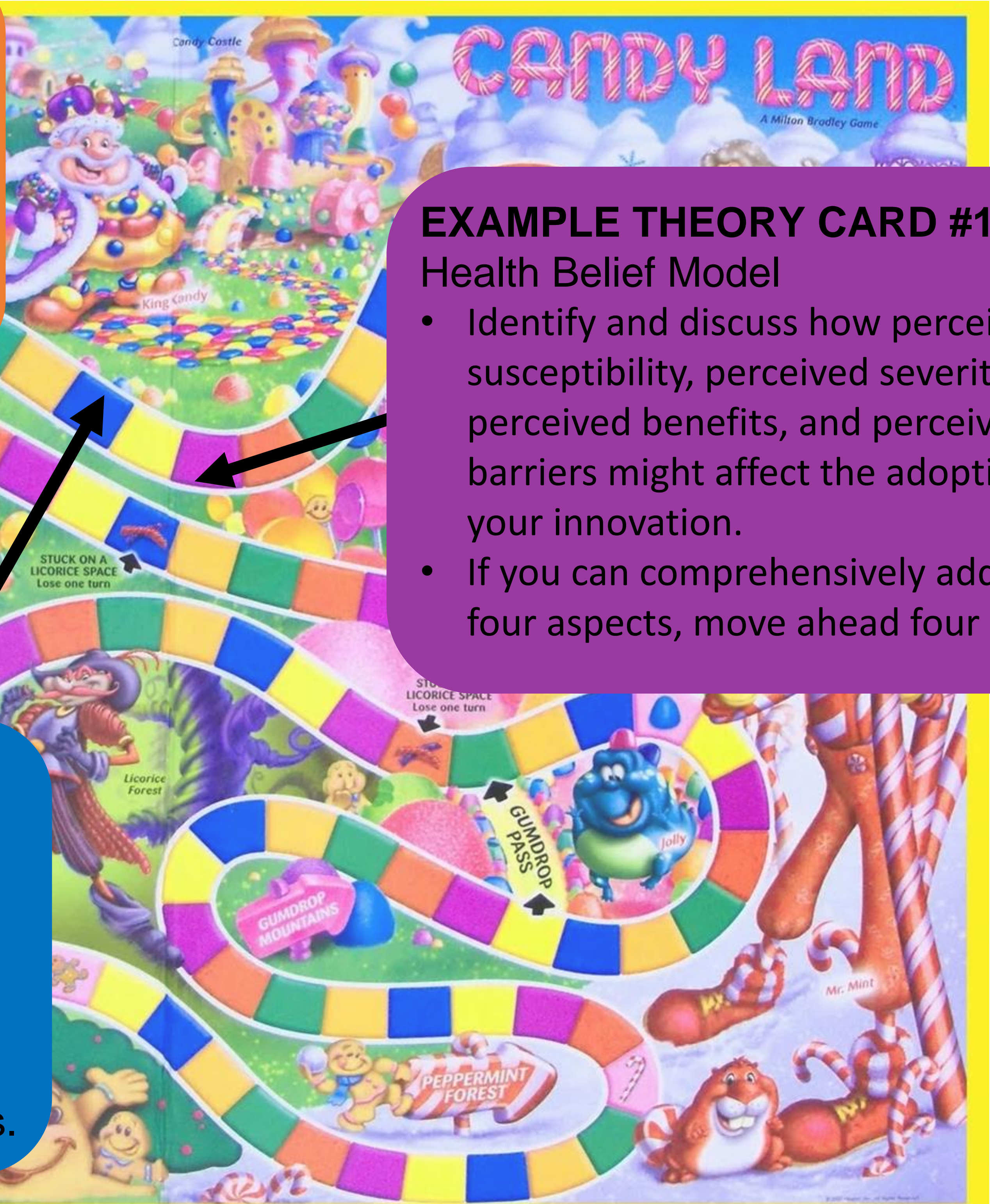
EXAMPLE THEORY CARD #1
Health Belief Model
- Identify and discuss how perceived susceptibility, perceived severity, perceived benefits, and perceived barriers might affect the adoption of your innovation.
- If you can comprehensively address all four aspects, move ahead four spaces.

EXAMPLE THEORY CARD #2
RE-AIM
Reach Card:
- Your innovation targeted an underserved community. Name two barriers this community might face in using your intervention.
- If you can, move ahead three spaces.

RESULTS

- There was a statistically significant (p=0.035) difference in mean exam scores between the gamification of SBT group 90.67 (4.34) and the traditional lecture only group 75.5 (14.01).

IMPLICATIONS

- The use of gamification aided graduate students in successfully applying SBT to various health challenges indicating further use of gamification in pharmacy graduate-level courses to improve student comprehension.