Gamification

Is there a role in Radiation Therapy?

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What is Gamification?

**gamification**

*noun*

the **application of typical elements of game playing** (e.g., point scoring, competition with others, rules of play) **to other areas of activity**, typically as an online marketing technique **to encourage engagement** with a product or service.

“gamification is exciting because it promises to make the hard stuff in life fun”
What is Gamification?

Oh, you mean these things...
What is Gamification?

So what, we like to collect stuff...
Why Gamification Works

- Able to change behavior by tapping into motivational drivers of human behavior in two connected ways\(^1\):
  
  1. **reinforcements**
     - both positive and negative reinforcements encourage repetition of behaviors

  2. **emotions**
     - behavior changes can be motivated either through extrinsic or intrinsic reinforcements, that is while external factors (money, fame, etc.) can certainly motivate human behavior, emotions are also powerful motivators for behavior change
Why Gamification Works

• Successful gamification involves repetition of desired outcomes

• Through the motivational mechanisms of reinforcements and emotions, desired outcomes become automatic behavioral processes or habits\(^2\)

• Habits are formed through providing cues that elicit behaviors and then rewarding the behavior, thus forming a behavioral loop that requires less and less cognitive resources as the desired behavior is repeatedly reinforced\(^2\)
The Habit Loop

**Cue**
A trigger that tells your brain which routine to use

**Routine**
The physical, mental or emotional behaviour that follows the cue

**Reward**
A positive stimulus that tells your brain that the routine works well

**Craving**
This powers the habit loop.
The Habit Loop and Gamification

• Gamification (a) attempts to produce desired behavior change (b) through the formation of habits (c) by reinforcing the reward and emotional response of the individuals participating in the experience[1]

• It attempts to create a (artificial?) reward system to produce desired behavior and create a craving for more
### Common Gamification Techniques

- There are some common techniques to reward the desired routine (to create/change the habit loop):

1. **points**
   - directly awarding points based on desired behavior

2. **badges/achievements**
   - awarding badges to signify notable accomplishments

3. **leaderboards**
   - encouraging competitive behavior by publicizing results
Freshdesk

• Customer service platform
• Introduces traditional gamification mechanics such as achievements, badges, and leaderboards to increase support staff engagement and productivity[3]
Freshdesk

• Employees become players attempting to accumulate points
• Points and achievements are visible throughout the organization, signifying top performers to management
• Encourages teamwork and apprenticeship by rewarding group and apprenticeship activities
• Goal of increasing overall productivity (i.e., customer satisfaction) by encouraging good habits
Jay-Z Decoded

• Autobiography of Jay-Z (rel. 2010)
• Each day leading up to the release of his new book, pages were posted in 200 locations across the world
• Book would be assembled online by fans, weeks before it was released
• Managed by Droga5 (advertising firm) and funded by Bing (Microsoft)
• Participants were incentivized with early access to book and prizes
Jay-Z Decoded

• Extreme example of gamification in marketing, but illustrates the power of using gameplay elements to change behavior

• Participants both received and solved clues using Microsoft’s Bing search engine (change in routine)
  • Created a media value two times the investment
  • Generated nearly one billion media impressions
  • Increased Bing’s market share to the highest percentage since its launch in 2009[4]
What is Gamification?

**gam·i·fi·ca·tion**
noun
the application of lessons from the gaming domain in order to change stakeholder behaviors and outcomes in non-game situations.

“through gamification, we turn traditional organizational processes into fun, game-like experiences”[1]
Gamification Pitfalls

Games are not fun because they’re games, but when they are well-designed

• Just because you add points, badges, or a leaderboard, doesn’t mean you make the activities more enjoyable
Gamification Pitfalls

Fun from games arises out of mastery

• Rewards are not a substitute for actual achievements or accomplishments, they have to be tied to mastery of relevant and recognized behaviors
Gamification Pitfalls

Players seeking to advance in a game will always try to optimize what they are doing.

- Be careful what and how you incentivize, because you may end up with unintended consequences (e.g., “gaming” the system, cheating).
Deming and Gamification

“YOU DON’T HAVE TO LEARN NOR DO YOU HAVE TO CHANGE. YOU DON’T NEED TO SURVIVE EITHER!”
~W. EDWARDS DEMING

• Strong advocate for recognizing and celebrating mastery in the workplace
• Strong opponent of ranking people for punishment, instead, it should drive continuous improvement
Deming and Gamification

Whenver there is fear, you will get wrong figures

W. Edwards Deming

• I believe Deming would be a fan of properly implemented gamification efforts, but an equally strong opponent of poor gamification
Pillars of Successful Gamification

1. **rewarding**
   should encourage mastery of a craft, skill, or profession

2. **respected**
   should not belittle or demean the behavior or invoke controversy

3. **responsive**
   should adapt and change to keep the experience engaging
Gamifying Radiation Therapy

• What might successful gamification efforts look like in radiation therapy?
• Is it possible to introduce game mechanics (points, badges, leaderboards, etc.) without jeopardizing industry respect?
Plan Studies and Gamification

• One could make a valid case that plan studies exemplify gamification

• Introduces scoring and competitive elements to planning

• Interesting to examine participation trends
Plan Studies and Gamification

- Max score, 48 updates
- 174 updates
Plan Studies and Gamification

• What motivated people to update their score 50, 100, 150 times?
  • Competitive spirit (i.e., to beat their friends)?
  • Pride of workmanship (i.e., to prove to their superiors)?
  • Mastery of a skill (i.e., to push themselves)?
  • ...or maybe just gluttons for punishment?

• This type of high engagement is the goal of gamification (i.e., habit loops were formed)
Radiation Therapy Badges

• Question: Is it possible to create an industry accepted badge system?
• What if all of medical education incorporated digital badging into credentialing and certifications?[11]
• Industry-wide would take time, but perhaps organization-specific credentialing is a start
Radiation Therapy Leaderboard

• Should radiation therapy (and other disciplines) embrace the competitive spirit?

• This seems to be in conflict with a core Deming belief: if leaderboards are used punitively, they will not be productive

• How do we change the culture to one of continuous improvement?
Conclusions & Takeaways

• When implemented properly, gamification can influence behaviors by providing meaningful rewards and thus creating or altering habit loops.

• When implemented poorly, gamification can cause disengagement and lower participation.

• Successful gamification should strive to be:
  • Rewarding,
  • Respected, and
  • Responsive.
Conclusions & Takeaways

• Within Radiation Therapy, it will take time before large-scale gamification efforts permeate.

• Plan studies demonstrate that game mechanics (competition, scoring, etc.) can drive action and affect behaviors.

• Need to be careful of users “gaming” the system; be careful what and how you incentivize.

• Need to be careful not to lose the patient perspective and the human touch.
Thanks! Questions? Comments?

...and we hope to see you at the ProKnow booth (#201)

ProKnow

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Session #956
References


