

Introduction

The text below should provide an introduction (supplemented by the lecture in class) of the heuristics used for this homework assignment. Please read the content below carefully, as you will need to understand and apply these ideas to justify your evaluations. The following text is an excerpt from a paper that is currently being written, so please ignore the references (which I've removed from the bottom of the document) and understand that some of the supporting text below may refer to the broader document which is not provided here.

Five Principles of Gamification

An amalgamated set of five game design heuristics (see below) were developed that may provide the bedrock for a unified gamification framework while highlighting broad techniques and strategies for applying gamification effectively. They were organized into four overarching gamification categories: System Design / System Use, User Characteristics, Environmental, and Translational. Each assist researchers and developers in determining the mechanism for appropriate application of the principle (e.g., within the system design), relevant factors that affect whether the gamification attempt will be successful (e.g., environmental factors), or how the principle can directly lead to behavior changes outside of the intervention space (e.g., translational). These categories alleviate external issues associated with the potential success of any particular gamification mechanic (see Figure 1), and assist in relating gamification principles to the domain of Internet Interventions.

The five gamification principles, along with detail regarding their context and application, are:

Supporting player archetypes - When implementing gamification techniques, it is relevant to recognize ways in which users understand and enjoy play (defined as a “free activity standing quite consciously outside ordinary life as being not serious”; see [25,44], and leverage this to motivate them. Several player-type taxonomies exist, but one ubiquitous model identifies four primary player types in Massively Multiplayer Online (MMO) games, and includes the achiever, the explorer, the socializer, and the griefer [3]. Each describes a unique player type with different preferences and priorities (see [3] for more details). For example, if users are identified (through user studies or similar techniques) as explorers, then the intervention will likely find value in arranging content in a non-linear manner, allowing the user to explore the content at will. In contrast, this principle would be applied erroneously if designers believe users desire something in which they do not. For example, if

a user base does not tend to value achieving, then adding quests or badges or levels will be unlikely to improve the interaction between the user and the program. Thus, application of this principle is highly dependent on the users who will use the program. In fact, user studies may reveal other user-dependent features more relevant for any given design. Other categorical gaming literature includes topics such as personalization of gaming aesthetics [26] and have explored the ideas that these principles are highly dependent on the user's conceptualization of play. Thus, supporting player archetypes includes work done to support particular aesthetics of games important to a particular user base, which may include things such as fantasy, narrative, expression, etc. (See [26] for a non-exhaustive list of game aesthetics).

Meaningful / Freedom of Choice – Many successful entertainment games allow players to choose their path in some manner. Thus, gamification might also leverage some degree of freedom to choose one's own path. This can manifest itself in subtle ways (e.g., the user must do activities X and Y but may choose what order to do them) and more explicitly (e.g., designing a complex decision tree of possible unique paths through some interaction between the user and the program). This principle is closely related to the idea of personalization [26] and is intended to allow users to feel as if they have control over the ways in which they pursue their goals. Even if the specific activities in an intervention are linear, designers can give users the freedom to choose how they approach the activity, make decisions about how they are assessed in the activity, or provide some other form of meaningful choice. Also note that the 'meaningful' qualifier here implies that the decisions made must relate to the overall goal of the interaction between the user and the program directly and should provide the user with the feeling that s/he, to some degree, controls his or her own destiny.

Meaningful Purpose / Knowledge of Benefits - Users should understand the purpose of the activity and have (or move towards having) explicit knowledge of the benefits of the interaction they are having with the program. This relates directly to a criticism of gamification in that "points," for example, can be meaningful if displayed publically on a leaderboard, but meaningless if inside an isolated one-player game [7]. Likewise, users should understand the goals and potential benefits of interacting with the program, which is expected to result in user motivation to participate. This can be achieved through a careful understanding of one's user distribution, tailoring the system to those involved. It can also be achieved through system design by incorporating explicit goals, an endogenous scoring system, small manageable "quests," etc. It is important to note that 1) gaming vernacular (quests, points, etc.) should NOT necessarily be used unless it is meaningful in the given

context, and 2) any gamification feature intended to bolster a sense of purpose must, by definition, relate directly to that purpose and this relation must be clear to the user. This is necessary for an endogenous application of gamification.

Feedback - Feedback should closely mirror the content from which it originated [37], indicating that technology should always communicate to users when an action has been performed, some understanding of the action that has been taken, and present how the system is reacting to that action. This includes how the system is changing its underlying state in response to a user action. Likewise, gamification should involve full communication to users regarding how their actions relate to their underlying goals and how (and to what degree) they are moving towards those goals. The purpose here is to prevent situations in which users experience confusion regarding connections that exist between their actions and the overarching goals.

Visibility of Progress & Path to Destination - When progressing through a gamified system, users should be able to understand (often through visualization and other communication efforts) where they began, how far they have progressed, and where they are headed (the goal). The presentation of goals can be either immediate goals (e.g., you have completed one of two tasks for today) or longitudinal (e.g., you are 30% to your target weight and have eight more weeks of training). While this principle may seem evident, there are some common pitfalls; however, these can easily be avoided. Not communicating a user's destination can lead to disorientation regarding the plan, or set of steps, leading to some goal. It can cause intermediate tasks to become disjointed from the greater context and goals of the interaction with the gamified system. Likewise, not revealing the path from inception to the current moment risks the user forgetting the effort and progress that has been made. This is closely related to the concept of visibility [37] in which technology is encouraged to present the current state of the system, so the user might discover how best to interact with system next.