

The Ethics of Gamification

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Megan Marie Bower

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Richard Jacques, Department of Engineering and Society

The Ethics of Gamification

Introduction:

Gamification is the addition of game-like elements to non-game applications (*What Is Gamification?*, 2022). It is a ubiquitous methodology used everywhere from social media to healthcare. This paper will explore the ethical implications in using gamified systems, with a focus on applications in consumer healthcare products. In this analysis different ethical perspectives will be considered. These perspectives will then be placed into conversation with each other and the concept of gamification, to draw conclusions on the ethical nature of gamification.

The paper will address the historical background of gamification, its modern applications, and common ethical objections to the practice. These elements will then be analyzed using both normative and non-normative ethical frameworks. This will lead to a deeper understanding of the ethical considerations designers must have when implementing gamified systems.

This topic of interest builds on my technical work redesigning the Incentive Spirometer (IS). The IS is a medical device used by patients to fully inflate the lungs to prevent fluid collection (*Incentive Spirometer*, n.d.). It is often prescribed in post-operative settings, and has been shown to be effective at preventing complications such as pneumonia (Wren et al., 2010). Despite its effectiveness, patient adherence rates are low (Eltorai et al., 2018). This technical work seeks to address the low adherence rates by implementing a new gamified design that will encourage patient usage.

Literature Review:

The theoretical framework of this paper is largely based on the concepts of normative and non-normative ethics as described in Beauchamp and Childress's *Principles of Biomedical Ethics*.

This work is explored more deeply in the discussion section and sets the groundwork for describing the potential ethical issues.

The historical basis of this paper is primarily from a book chapter by Mathias Fuchs entitled *Predigital Precursors of Gamification*. This piece set the groundwork for examples of gamification prior to the term itself emerging with digital technology. This source was a landmark that helped guide much of my other research.

A final key reference in this paper was the book *Nudge* Thaler and Sunstein. This book, though not specifically focused on gamification, discussed the concepts of subtle nudges based on design choices. Gamification can arguably fall into the category of these nudges. Therefore, this book added value to my research.

The remaining resources used in this paper were primarily from scholarly articles. There were a few journalistic and reference pieces, which were sourced from reputable resources. However, the emphasis of this paper was on the analysis of scholarly works, as they provide a higher-level commentary on my subject of interest. The inclusion of non-scholarly works is also important, because these works help to draw the paper back to real-world applications.

Methodology:

The methods of this paper use a combination of quantitative and qualitative data analysis. The bulk of the quantitative data is in the technical portion of the paper. This data will be generated by my team's design and clinical-based work. The STS portion of the paper contains primarily

qualitative data, with some quantitative data. The reason for this distinction is that the technical work has more of a focus on the impact of my device, while the analysis of ethics is primarily qualitative in nature.

The key difference present here is that the technical work is taking an experimental approach to data generation, while the STS work is taking a descriptive approach. This difference in methods is entirely valid and logical because the nature of the sections is entirely unique. Experimental methods, while useful to ethics, are limited by the time and scope of my work. Likewise, descriptive methods apply less to my technical work due to their experimental and iterative nature.

Similarly, the use of primary and secondary sources varies based on the part of the paper. The technical portion has some primary sources and self-collected data. This portion also references secondary sources as references but does not rely entirely on them. The STS portion of the paper is primarily secondary sources. This is because there was limited access to a proper audience and limited time to collect self-sourced data. There are some primary sources that are used in this section. However, secondary sources are more abundant, especially in the field of ethics.

These data methods are valid and reasonable for the purposes of this research. This is because the source adequately provides context to allow for synthesis and the drawing of conclusions. The diversity of data sources across the project brings robustness to the argument of the paper.

Discussion:

Ethical Frameworks:

Ethical frameworks can be broadly divided into two categories normative and non-normative. Normative ethics works to establish a set of norms that guide ethical and moral decision making (Beauchamp & Childress, 2019). Normative ethics often leads to different schools of thought such as Utilitarianism or Kantianism. Each of these theories prioritizes different elements of ethical value. Thus, normative ethics has its limits where theories, and individuals, diverge.

Non-normative ethics are ethics that try to envision how the world should be (Beauchamp & Childress, 2019). This is very typical of social anthropologists and moral philosophers. These methods weigh what is ethically valuable in order to analyze how the world should look (Beauchamp & Childress, 2019). This arm of ethics focuses less on creating a structure of decision making than normative methods. However, it can still be valuable in the synthesis of moral decisions.

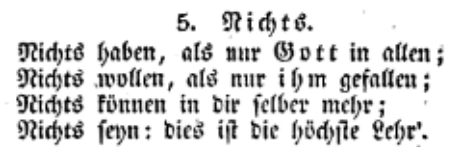
The focus of this analysis will be primarily on normative methods. However, it will not be exclusive of non-normative ideas.

History of Gamification:

The term gamification is relatively new to scholarly circles. It was first used in 2002 by Nick Pelling, with a slightly different meaning. His version of gamification meant that manufacturers could use lessons from the game industry to improve their products. The first use of the more mainstream definition of gamification was in 2008 by Bret Terrill (Tulloch, 2014). However, gamification did not begin to take off until the early 2010s. From there the two key aspects of

gamification began to take shape: the use of game-elements on non-game contexts and the addition of game-thinking as a way to engage users (Jakubowski, 2014).

Despite its recent debut, the underlying concepts of gamification can trace their roots back as far as the advent of games themselves. For much of time, in the western, Christian world, religious leaders shunned games. Games were seen as sinful, in part because of their generally negative portrayal in the Bible (Fuchs, 2014). In the 18th century there began to be a shift towards the acceptance of games and play. This led to the century being dubbed the “century of play” by the scholar Daniel Bernoulli (Koch, 2017). This title for the century was not unfounded, many elements of life began to accept fun and games.



5. Nichts.
Nichts haben, als nur Gott in allen;
Nichts wollen, als nur ihm gefallen;
Nichts können in dir selber mehr;
Nichts seyn: dies ist die höchste Lehr'.

Figure 1: Example of a card from

One early example would be Kirnberger’s Ever-ready minuet (Fuchs, 2014). This composing method allowed for the user to create unique musical pieces by simply rolling dice and performing musical operations on pre-existing pieces of music (Hedges, 1978). Another example of every day games was Tersteegen’s Pious Lottery. This game encouraged people to carry out the prescribed practice of daily prayer, but in a fun manner by picking a random prayer/scripture card (Fuchs, 2014), such as the example in Figure 1. Such lifestyle innovations brought the concept of games to the forefront of 18th century society.

Springing forth from the move towards games in the 18th century, were educational games. These games such as “the mansion of happiness” and “the checkered game of life” emphasized the moral education of people by rewarding landing on virtues and punishing landing on vices or spaces with moral falterings (“Board Game Empires,” 2021). Overtime games have moved away from this style, but the usefulness of play in learning has not been lost.

Since computers have become commercialized, there has been a steep rise in “edutainment” software (Sheldon, 2020). Edutainment is a concept that combines the draw of electronic games with educational goals (Okan, 2003), in turn making learning more entertaining. These games have historically struggled to strike the right balance between education and entertainment. This is primarily because of the lack of overlap between teachers and game designers (Sheldon, 2020). However, this method of gamification in education and beyond is continually on the rise. Altogether, the modern industry of Gamification is a multi-billion-dollar industry. The industry is still growing at a fast-pace. It is expected that gamification will rise from a market share of \$3.5 billion in 2018 to \$24 billion by 2024 (Baraishuk, 2022). This industry contains a diverse array of business types including technology, education, healthcare, and behavioral science (Parmer, 2022). The focus of the remaining analysis of gamification will be on that within the healthcare sector. This is because it is most complementary to the technical component of this paper.

Ethical Concerns:

The key ethical objection to gamification is that gamification is a form of manipulation. This is an idea raised by users of gamified technologies as well as scholars studying the same technologies. These individuals believe that by embedding game-elements into non-game contexts, users are biased towards certain decisions that they would not otherwise make (Gorin, 2022). Gamification is often used as a means to provide nudges towards individuals to influence their decision making (Martin, 2022), so if these nudges are interpreted as manipulation this could create an ethical issue.

However, the crux of the argument is not so much if the influence of gamification is a simple nudge or manipulation. That part is frankly a matter of semantics. The argument lies in the debate of whether being able to influence, or manipulate, people's attention is inherently bad. On one hand, there are examples of gamification overriding people's judgment such as in ride-share apps. These apps employ bonuses for competing certain "challenges" and show "progress bars" that encourage drivers to meet these goals. Yet, these challenges entice drivers to "beat the game" even at the expense of their own time or well-being (Mason, 2018). On the other hand, if the task that you are encouraging the individual towards is inherently good for them, can it be considered manipulative. For example, some studies have shown that the arrangement of items, such as food in a cafeteria line, can make significant changes in the choices people make (Thaler & Sunstein, 2008). Arguably, this can be used for the benefit of people if healthy choices are presented in the prime spots. Similarly, the focus of my technical work has been to use the gamified elements my team added to the IS to attract patients' attention to the undesirable task of respiratory exercises. Manipulation, or redirection of attention, does not always have to be harmful to people, therefore there may be ethical angles that both accept and reject the practice of gamification.

Unquestionably, gamification is a major industry, or in some cases a component of other industries. In this sense it would benefit from ethical guardrails. One group out of the Association for Computing Machinery has made a proposal for an ethical code for gamification. This code focuses on 5 components: Honesty, Integrity, Transparency, Quality, and Respect (*Open #Gamification Code of Ethics*, n.d.). This set of ethics lays out the groundwork for how designers can create systems that consider the needs of their users. Although not comprehensive,

this ethical framework is a starting point for further discussion and reflection on the impact of gamification.

Pulling back to my earlier discussion of ethics, both normative and non-normative ethics would address the issues of gamification and manipulation differently. A normative approach would endorse an ethical code similar to the one created by the Association for Computing Machinery. These individuals would argue that the best way to ensure ethically gamified systems would be to set norms and boundaries on their use. Though the varied strands of normative ethics like utilitarianism and Kantianism would emphasize different values to be highlighted in the code, they would agree on the utility of a defined ethical code for gamification.

Contrastingly, non-normative ethicists would focus more on creating the ideal gamified system. These scholars would be more focused on what ethical gamification is instead of placing rules on a whole class of systems. This is more of an anthropological approach, which may take a longer-term approach to balancing manipulation and gamification. The synthesis formed by these methods will enhance, and in some cases, counter the rules created by those who are normative thinkers. However, for the more immediate analysis of gamification, these methods provide secondary support to normative methods.

Despite the ethical perspective used to analyze gamification, it remains critical that the users and designers know the manipulative nature of gamification. If ethics is not addressed, there will be tension among the users. However, clear communication of intentions and norms is a way to make ethical technologies. With this solution, gamification can still contribute, but users will have a choice of how and if they engage with it.

Impact:

As described above, the ethics of gamification are complex. Those like the authors of the gamification code of ethics seek to define the ethical constraints of technologies such as gamification in concrete ways. In these systems, boundaries and control are clearly agreed upon and respected. This makes it easy to comprehend what is in or out of line. However, these normative approaches ignore the intangible elements of ethics. This would include virtues, emotions, or user perceptions. These elements of ethics are important and help to create more holistic ideas of ethical understanding.

The impact of my technical work is in this area of ethics. The objective of this project is to use gamification as a positive means of encouraging therapeutic behaviors. Although we are trying to motivate a particular behavior, it can be seen as non-manipulative because it has only positive outcomes for the patient. Additionally, patients and providers will be given transparent views of the technology to make informed decisions about whether it is right for them. This argument for my technology can extend to many other healthcare applications, given that there is no harm that can happen to the patient. Gamification has the potential to have a positive and ethical impact on users, especially in healthcare, if it is used in a responsible and respectful manner.

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Conclusion:

The ethics of gamification are complicated and evolving. Since the beginning of games in mainstream culture, there have been those that embrace and those that reject gaming. The use of games to motivate individual engagement and learning is not a new trend. Yet, the idea of “gamification” is relatively new to our language. Naming a phenomenon that has always been present is just one part of gamification. As a result of the new attention, gamification has become a monetized, multi-billion-dollar industry.

The rise of gamification rightfully brings up ethical concerns. Many people are concerned about its manipulative power. These people are justified in their concern, since some gamified technologies push people towards decisions that may not be in their best interest. However, when rightly directed this ability of gamification to subtly influence people’s decisions can be used for good. This positive use of gamification is what I am trying to capture in my technical work. Through harnessing the engaging elements of gamification, my team and I have created designs for new incentive spirometers that will hopefully promote increased patient usage.

At the same time, to address the rising concerns with gamification, draft ethical codes have been created. These codes just scratch the surface of people’s concerns. Thus, they are merely a starting point for further ethical discussion and inquiry. Additional work in ethics should also focus on the less tangible impacts of the technology and consider non-normative approaches.

My research demonstrates that there is no simple answer to whether gamification can be regarded as ethical. To determine this, developers must holistically reflect on the work they are doing, and the impact that work has on the users. Through this reflection process, designers can

balance the risks and benefits to come to an understanding of the ethical implications of their product.

Word Count: 3222

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