Chapter 9
Legal and Ethical Issues

Quest
Let's explore legal issues in gamification.
Let's figure out ethical issues in dynamics and mechanics.
Let's understand side effects of gamification.

9.1 Legal Issues

Since each country and state have different laws, it is hard to explain universal rules that can be applied for every setting and situation. However, this section will discuss some legal issues that can occur in many places.

9.1.1 Privacy

The concept of privacy is somewhat vague and its definition varies depending on disciplines. However, regardless of disciplines, it is a commonly acceptable idea that privacy cannot exist without the cooperation of people and society.

Problems related to privacy occur when unauthorized individuals or unaccredited organizations access or try to access the personal information of an individual or a group. In the course of designing or running gamified learning and education, educators may need to use students' personal information. Educators should not assume that they have the right to use the information even though they may have access to it. When personal information is used for different purposes than originally intended, educators must acquire permission. To avoid privacy issues, it is necessary to ask following questions:

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- Are you authorized to access the personal information?
- Do you have an official document proving permission to access the personal information?
- Do you have a safe means to protect the personal information?
- Are there any individuals who can access the personal information without permission?
- Does the personal information include private information like social security numbers?
- Do you have a contingency plan for data spillage?

Unless the gamification in learning and education is for anonymous learners, it collects and uses identifiable information, such as user IDs. Encrypting data is highly recommended when it is unavoidable to collect and use the identifiable information.

If gamification uses information technologies, there is higher possibility of invading privacy rights. Gamification based on information technologies sometimes includes user tracking techniques such as the following:

- Cookies
- IP addresses
- Device IDs
- GPS coordinate data
- Log data on user behaviors (e.g., visited pages and duration)
- Log data on user's technological environment (e.g., web browser and operating system)
- Analytics

While analytics from the above list is for analyzing data, the others are for collecting data that can be used as user tracking. Using cookies is not a new technology. Cookies are created by the activity on web browsers and stored in a user's computer. The gamification system accesses and uses the stored cookies when the user accesses it. Some gamification systems use IP addresses to see user's geographical location or network environments. If the gamification uses mobile devices, the system for gamification can collect GPS coordinate data showing the student's moving paths.

Analytics tools provide educators with meaningful information in terms of education. The information includes:

- When and how frequently each student accesses the gamification system or gamified learning materials
- Access history with visited pages and stay time on each page
- What technological environments each student has

Educators have to check what kinds of technologies will be used for the gamification and inform students some technologies will be used for the gamified learning and education. Also, when educators use leaderboards for the gamification, they need to consider how the leaderboards will be shared and what information will be included in them. Some students may not want to show their real names on the leaderboard.

9.1.2 Copyright

Copyright is a legal protection device to ensure creators' rights regarding the use of their work. Copyright, as a protection means, can promote creative works in various fields. However, copyright issues sometimes delay the development process for gamification. Educators must beware that it is illegal to use existing avatars, virtual items, or badges in most cases. Those are protected by copyright. Thus, educators need to create their own avatars, virtual items, and badges. Or they have to request and acquire the permission to use existing works. Although many copyright holders allow educators to use their creative works for educational purposes, it should not be assumed that educators can use the creative works without permission.

When educators want to use some old works, they need to check if the copyright for the works has lapsed. According to the Berne Convention for the Protection of Literary and Artistic Works, which is an international treaty signed in 1886, most creative works are protected for 50 years after the creator's death (for the duration of the creator's life plus 50 years.) However, some countries protect the copyright for different durations. Many countries protect the copyright for 70 years after the creator's death.

Unlike applied art works including avatars, virtual items, and badges, the game mechanics and rules are usually not protected by copyright. It is because accepting exclusive rights for the game mechanics and rules can hinder other creative efforts for developing games and gamification.

It is recommended that educators contact the copyright holder to discuss permission and possible monetary compensation before starting to develop the gamification.

Online Resources for Further Studies on Copyright Laws:

- *World Intellectual Property Organization at www.wipo.int*
- *WTO* TRIPS** Agreement at www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm*
- *US Copyright Office at www.copyright.gov*
- *EU Intellectual Property Office at euipo.europa.eu*
- *UK Intellectual Property Office at ipo.gov.uk*

**WTO: World Trade Organization.*
***TRIPS: Trade-Related Aspects of Intellectual Property Rights.*

9.1.3 Ownership

Educators may encounter ownership issues while running the gamification, although this type of issue is not frequent. Game players invest their time and resources in games or gamified systems for making progress and achieving goals. Their progresses and achievements are usually managed in the form of data. However, the data can be affected by unexpected situations such as the following:

- Network failures in sending data on the player's action to the gamification system
- Programming error that causes data distortion
- Loss of data on specific player's or entire players' progresses and achievements

When the gamification uses information technologies, educators should check the reliability of the technologies by conducting pilot tests with authentic scenarios. It is not easy to find and fix the cause of the technological problems during running the gamification.

Even when the gamification does not use gamification systems based on information technologies, loss of data can occur during or after the gamification. Though it is not frequent, losing data on the player's progress and achievement makes the player discouraged and suspicious of the gamification's reliability. The player who experiences loss of data has a tendency to stop participating in the gamification in the future.

Ownership is not an issue when the gamification works without any problems. When loss of data occurs, however, the ownership becomes an issue. In many cases, users sign an agreement on the terms and conditions of the game and gamification services. The agreement usually includes phrases clarifying the ownership of the data or virtual items belonging to those who operate the game or gamification. Based on the agreement, game companies may argue that users do not have ownership of the data and virtual items. In opposition, users may claim that the ownership should belong to the users since the data and virtual items are the products of their efforts and investments.

Ownership issues become more serious when the data and virtual items are valuable in the real world. Some games and gamification platforms include items that have exchange values in the real world since the inclusion of them can encourage the players more. This means that losing player progress and achievement data is no longer just a problem within the gamification. The player, as a victim, may ask those who operate the gamification for appropriate compensation for their loss. Some countries accept players' ownership of virtual items and their value as property.

9.2 Ethical Issues

While legal issues are related to rules that can have penalties when violated, ethical issues are not directly associated with penalties (Thorpe & Roper, 2017). However, educators should know the ethical issues, including justification, deception, and consent, that can occur while developing and running the gamification.

9.2.1 Justification

Who defines the rules of the gamification in learning and education? In most cases, educators decide the rules except for the cases when students participate in the gamification design. However, some rules can be against some of the students due to their social, cultural, and educational environments and their physical conditions.

Educators need to check the game rules in terms of justification when they design the gamification. They have to review the data on their target audiences, namely their students. If it is hard to remove the rule that can be against some of the students, educators should consider including alternatives that can be optionally selected by each student.

Another type of justification issue is associated with the possibility of inducing students to take a specific action or have a particular preference that is not related to the purpose of the gamification. For example, when the gamified education includes a means to form a student's preference on a specific tablet computer, some people, including students, may raise the justification issue.

9.2.2 Deception

Deception is an action to achieve a goal by providing an individual or organization with incorrect information that is necessary to make a decision. In gamification in learning and education, deception may occur if students are misled about the purpose of the technologies used for and mechanics used in the gamification.

Although the American Psychological Association permits deception for psychological experiments, educators should provide students with sufficient and correct information and intentionally avoid deceiving students in gamification.

Many fields, including medicine and psychology, allow the deception of patients or experiment participants with some limitations because there can be benefits. In education, likewise, deception can be considered to confer a benefit to students. If deception is necessary for achieving educational goals of the gamification, educators may consider deception after trying to find the alternatives that can be used for achieving the same goals. Deception should be the last option educators choose. When educators use deception for their gamification, it is recommended to have an internal review committee that reviews the gamification plan and assures the students' rights and risks.

9.2.3 Consent

Consent is a familiar process to educators since they have used it for special activities such as research, field trips, or information use. It is best to follow the consent process before running the gamification especially when students have not experienced the gamification before. Educators should provide students and their parents, if the students are at K-12 schools, with the details on the gamification and what the students will do within the gamified education.

Some gamified education may include participants other than students. If it is necessary to include those who are neither educators nor students in gamification, the consent process is significant. Before acquiring the consent, educators should inform all participants of possible situations and risks that may arise during the gamification.

9.2.4 Limitation of Acceptable Fun

As discussed in the previous chapters of the book, there are various fun types in games and gamification. However, some fun types are inappropriate for learning and education although they can be more fun than the others. For example, eroticism, sadism, and subversion are the fun types that educators should avoid in their gamification. When the gamification includes young students, the educator needs to be more careful to decide the fun types for the gamification.

9.3 Side Effects

Incomplete gamification can cause side effects. Some side effects are difficult to interpret before running the gamification. Thus, educators should pilot test and review any possible side effects. They should also consider including a means to reduce the side effects when they are unavoidable.

9.3.1 Pointsification

Many gamifications include points as one of the game mechanics. Some people think that the users of an information system or a program will be satisfied with game points as an additional feature to the legacy system or program. The new feature, however, reduces the user's fun.

Robertson (2010) defines pointsification as "taking the thing that is least essential to games and representing it as the core of the experience." Below is Robertson's comment on pointsification.

> Points and badges have no closer a relationship to games than they do to websites and fitness apps and loyalty cards. They're great tools for communicating progress and acknowledging effort, but neither points nor badges in any way constitute a game. Games just use them – as primary school teachers, military hierarchies and coffee shops have for centuries – to help people visualise things they might otherwise lose track of. They are the least important bit of a game, the bit that has the least to do with all of the rich cognitive, emotional and social drivers which gamifiers are intending to connect with.

Some educators may consider awarding game points to the students who come to the class on time for their gamified classes. However, are the students interested in this kind of game points? The game point as extrinsic motivation is not a bad idea, but the gamification can be more effective when it includes both intrinsic and extrinsic motivation (Colby, 2017).

Google News users could earn badges by reading news articles on Google News. However, there were so many badges and it was not hard to earn the badges. As a result, the users perceived that the badge is valueless. They could not feel a sense of

accomplishment, fellowship, and fun. Google seems to have overlooked the fact that people consider the meaning and story of virtual items as being more important than the virtual items themselves.

9.3.2 Dangerous Gamification

Players' behaviors in the gamification are sometimes unpredictable. Players tend to find more efficient ways to achieve their goals. Some of the ways found by players are not intended to be included in the gamification. Players finding new ways may be an embarrassment to the gamification designer or educator. However, more importantly, some of the ways found by the players increase the risk of the failure of the gamification and put the players at risk.

The risk becomes more serious when the gamification is integrated with the player's life beyond the gamification. Lazzaro (2012) explained the gamification for the Bay Bridge traffic as an example of the risk. To solve the traffic problem during the rush hour, the game designer suggested having a different toll rate, charging $6 before 7 PM and $4 from 7 PM. After implementing the gamification, the drivers found a way to save their money. Some drivers pulled their vehicles over off the highway to wait until 7 PM and save $2. The unpredicted behavior increased the risk of accidents.

In education, it is possible to observe similar phenomena. Educators may consider using the following techniques to avoid possible risks:

- Ask students about how to achieve their goals
- Draw a flow chart describing all possible behaviors within the gamification
- Remove or minimize the possible behaviors outside the classroom
- Conduct pilot tests

9.3.3 Threat to Core Values

The feedback and rewards in the gamification can weaken students' intrinsic motivation (Burke & Hiltbrand, 2011; Groh, 2012). Students who think virtual currency, points, and badges as valueless may perceive that their efforts and achievements are underestimated due to the rewards by the gamification. Activities in the gamification can be hampered by some of them because they think their teacher infantilizes them.

To prevent this type of problem, educators should explain that the feedback and reward are complementary to the gamified learning and its evaluation system. Also, they should correctly reflect students' efforts and achievements on their feedback and rewards. Compared to the real efforts and achievements, excessive rewards can make students lose interest in the gamification. On the other hand, if it is too hard to acquire the rewards, students will give up the learning or have a complaint about the rules of the gamification.

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