

# ***“Game Playing” and “Game Making”: Gamified Applications of Topical Education***

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**Abstract:** Through games, adults and children can practice concentration, learning abilities, analytical power, and problem-solving skills. To inspire and increase students' learning motivations, teachers have attempted to introduce games into the classroom, but they often encounter difficulties in practical application. Many instances of game integration into lessons are reduced to “games are games, and teaching is teaching,” and student engagement disappears at the end of the game; student motivations are unable to be integrated completely with the learning goals. Furthermore, many games designed for teaching are unenjoyable and do not easily engage students. This demonstrates the difficulties of integrating knowledge with gameplay: student motivation is increased in gameplay-based learning, but it cannot be sustained through knowledge acquisition. However, in knowledge-based learning, although teaching goals are met, student motivation is not activated. Our exploration of gamified education does not simply connect games with teaching but investigates how to design appropriate game strategies based on teaching requirements to achieve learning goals. This paper focuses on topical teaching to discuss the applications of two gamified educational methods: game making and game playing.

**Keywords:** narrative, game playing, game making, board games

## **1. Introduction**

Playing games is a high-level cognitive activity: animals learn required skills for survival through games. For instance, lions and tigers learn how to chase and bite each other without hurting each other when they are young; in addition to amusement, they learn hunting and other livelihood skills. Through games, adults and children can practice concentration, learning abilities, analytical power, and problem-solving skills. (E. M. Avedon & B. Sutton-Smith, 1971/2015: 325) To inspire and increase students' learning motivations, teachers have attempted to introduce games into the classroom, but they often encounter difficulties in practical application. Many instances of game integration into lessons are reduced to “games are games, and teaching is teaching” (E. M. Avedon & B. Sutton-Smith, 1971/2015: 338), and student engagement disappears at the end of the game; student motivations are unable to be integrated completely with the learning goals. Furthermore, many games designed for teaching are unenjoyable and do not easily engage students. This demonstrates the difficulties of integrating knowledge with gameplay: student motivation is increased in gameplay-based learning, but it cannot be sustained through knowledge acquisition. However, in knowledge-based learning, although teaching goals are met, student motivation is not activated. Our exploration of gamified education does not simply connect games with teaching but investigates how to design appropriate game strategies based on teaching requirements to achieve learning goals. This paper focuses on topical teaching to discuss the applications of two gamified educational methods: game making and game playing.

## **2. Game Playing: Considering Topic for Discussion Through Gamified Interactions**

Teaching is primarily the imparting of recognized knowledge. Analytically, this knowledge is generated and spread through narratives. Each branch of learning has a unique narrative structure and events that enable the narrative to unfold; this applies to the chemical reaction of hydrogen and oxygen in chemistry, the factors leading to the prospering of the Tang dynasty in history, or the interpretation of the basis for determining the truth in philosophy. Each event can be designed into a game. In other words, an event can be adapted into a game script; playing the game imparts an understanding of the

origin and development of the event. However, this may not be a desirable outcome of integrating games with course design. Games are not only meant for knowledge memorization. (E. M. Avedon & B. Sutton-Smith, 1971/2015: 324-325)

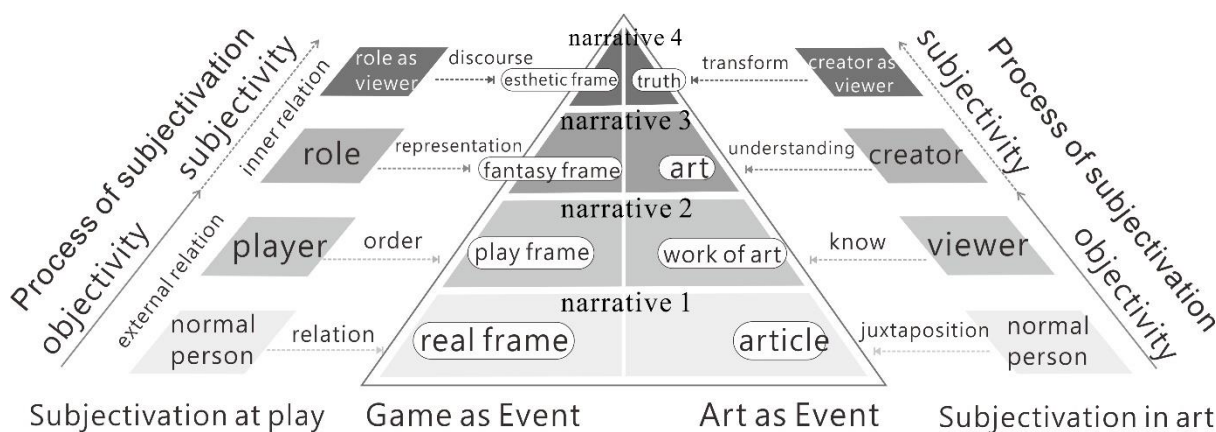
Fine, an American sociologist inspired by Goffman (1974), concluded that participants develop three different levels of behaviors within games. He argued that when players enter a game, they continually switch between and act within the following three “frames” (Fine, 1983: 186).

1. In an “everyday” frame (real frame), the participant performs narratives and interactions as a “(normal) person.”
2. In a gaming frame (play frame), the participant performs narratives and interactions as a “player.”
3. In a fantasy frame,<sup>11</sup> the participant performs narratives and interactions as a “fantasy character.”

Mackay (2001) agreed with Fine’s perspective but argued that this observation omitted a fourth frame in which players continue the game in some form after the game ends:

4. In an aesthetic frame, the participant performs narratives and interactions as the audience (Mackay, 2001: 122).

In each frame, a person (i.e., an ordinary person, player, character, or observer) enters a different subjective state specific to the frame. This also indicates that within the game, the player has several relationships with the narrative that simultaneously change and interact, and the causalities considered by the person within different narratives differ. For instance, common people view the game as an object that is unrelated to them, but a player considers how to win the game. A character within the game script considers the direction of the character’s story, and the audience observes how the overall story develops through events as well as how the characters interact. Schema 1 lists the subjects (i.e., people) corresponding to different narrative frames and works. Games are presented in the left column, and art is presented in the right column.



Schema 1: The process of subjectivation in the event (by Jing-Li HON)

To achieve a multilevel subject perspective in a game, game mechanics and narratives must be closely integrated. Understanding and actions toward different narratives generated within this type of game interactional theory greatly surpass those when games are viewed as a fun tool for memorizing knowledge. If the interactive nature of games and the subject perspectives of different levels are ignored, the game is simply a tool for stimulating learning motivation, perpetuating one-way learning that does not shape autonomous thinking or problem-solving skills. This paper emphasizes that interaction in

<sup>11</sup> “Fantasy frame” is the phrase in the original language, which was translated into Chinese to “advanced reality,” which refers to the imagined reality that players are engaged in. Players act according to the logic of the character they are playing in their imaginations.

games can be optimally integrated into topical teaching design. Topics, particularly public issues, include different stakeholders who interact using different narrative frames. Through games, topical teaching can avoid the dullness of recitation; furthermore, players can interact to understand the narrative context of different stakeholders and the complexity of an issue to identify a corresponding solution.

### **3. Game Making: Considering Topic for Discussion Through Game Design**

Game design resembles artistic creation in that no unified method of design can be used. Therefore, compared with creating something from scratch, many teachers directly use existing games and modify their themes. Monopoly, for example, has been adapted frequently because of its popularity. Regarding topic-based teaching, the greatest challenge of gamification in terms of practicality is probably the integration of individual topics into games; therefore, apart from gamifying topics of learning, we developed a “game-making” logical narrative scaffolding theory<sup>12</sup> with logical thinking as its starting point. This scaffolding theory enabled students to produce topic-related games from scratch rather than adapting existing games. In addition to avoiding the pitfalls of adapting Monopoly<sup>13</sup>, the scaffolding theory facilitated the design of a game that does not require prior knowledge and promotes the principle of equal treatment for all players.

The basis of the authors’ design theory is a logical structure. First, the game’s initial conditions and end goals are established. The game’s numerous paths are then organized according to the theme. To use storytelling as an analogy, the designers must first decide how the game’s protagonist begins and ends the game. They then consider what events the protagonist must experience to reach the ending. How these events are presented from the protagonist’s perspective becomes the challenge that the designer presents to the player in the game. Because the game is designed from the perspective of the player as the narrator, all actions and challenges in the game are closely linked to the game objectives to reduce inconsistencies between the narrative and the game.

The authors observed that in the classroom, students spent most of their time on the correlation between the game mechanics and the narrative instead of the design of the game system. With the teachers’ assistance and discussions, students were able to create original games that met the requirements of their stories without copied elements.

### **4. Conclusion**

Whether through “game playing” or “game making,” teachers can determine the focus of topical discussions on the basis of their teaching requirements. If no games on the topic are available, narrative interactions of “game playing” can still be facilitated through games with similar topics. Later, when transitioning to “game making” with a clear understanding of game mechanics, participants had the opportunity to create an original game that adheres to the topic. Gamified courses not only are enjoyable but also allow students to develop autonomous thinking and problem-solving skills through “game making” as “experiential learning cycle” defined by David Kolb (Kayes, Kayes, & Kolb, 2005: 5; Kolb, 2014: 38).

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<sup>12</sup> “Logical narrative scaffolding theory” was developed by author *Hung-Yang SHEN* from his teaching experience for several years.

<sup>13</sup> The problem with adapting Monopoly is that, in addition to the irrelevance of its theme and gameplay, Monopoly is often criticized for mostly involving luck and snowball effects. Furthermore, not every participant gains satisfaction from the game.

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