

A Theoretical Model of Incorporating Gamification Design into On-line Marketing

Hsiu Ching Laura Hsieh^(✉) and Chiao Yu Hwang

Department of Creative Design, National Yunlin University of Science and Technology, 123 Section 3, University Road, Douliou, Yunlin, Taiwan
laurarun@gmail.com

Abstract. Applying gamification design to websites for promoting users' experiences is a vital issue at present and in the future that in-depth discussions are necessary. This study intend to discuss experience from the aspects of human-computer interaction design, psychology, marketing, and communication to develop a “model applying gamification to networks for promoting marketing” with interdisciplinary knowledge and in-depth experiences and to treat it as the new possibility to effectively create users' experiences. The objectives of this study contain 1. to enhance online marketing and users' experiences with gamification design and 2. to construct a “model applying gamification to networks for promoting marketing”, which could enhance users' experiences, by incorporating interdisciplinary theories.

Keywords: Game · Gamification · On-line marketing

1 Research Background and Objective

The idea of gamification has been emphasized in many fields [14, 16]. Gartner, the globally famous technology research and advisory company, listed gamification as a primary technology in 2011 [4]. “Gamification” refers to utilize the human nature of being fond of playing around and the characteristics of games being able to inspire people for transforming dull things into fascinating playing processes. The idea is also applied to education to enhance learning motivation, and a lot of enterprises start to apply it to crowdsourcing [15, 21] or staff training [10]. Akito [1] also indicated that gamification was not simply the fad or trend; the power of games was existed, but current information environment provided proper space & time approach and media for actualizing the creativity of gamification as well as resulted in great changes in life, thinking, and marketing. Accordingly, design researchers should face the importance of gamification design, incorporate interdisciplinary theoretical knowledge for further explanations, deepen the understanding and application of the operation mechanics, and master in the application of gamification to networks. The objectives of this study contain 1. to enhance online marketing and users' experiences with gamification design and 2. to construct a “model applying gamification to networks for promoting marketing”, which could enhance users' experiences, by incorporating interdisciplinary theories.

2 Game and Gamification

The literature review in this study is cut in from the aspects of games and gamification to analyze the gamification design from the aspect of marketing, to analyze the audience pleasure model of gamification users from the aspect of communication studies, and to analyze users' experiences and gamification design from the aspect of human-computer interaction design.

According to McCormick [16], the prototype idea of gamification existed in 1980s. Although the word "gamification" was not used then, cases to apply game elements and game mechanics to educational learning had appeared, but did not induce too much attention. It was emphasized after the popularity of Foursquare in 2010. The commonly accepted definitions of "gamification" include "attracting users engaging in it and solving problems through game thinking processes and game mechanics" [23] and "enhancing users' experiences and engagement with computer game elements in non-game situational contexts" [6]. Apparently, games are not the purpose of gamification, but to bring interesting and fascinating experiences, with game elements and game mechanics in non-game situational contexts, to provide motivation and attract users' active engagement so as to achieve the preset goal. Zichermann and Cunningham [25] regarded "game elements" as the basic elements to construct games as well as the basis to guide the entire gaming process and "game mechanics" as the design to optimize and reinforce game elements. Hunnicke, Leblanc, and Zubeck [9] proposed MDA architecture to divide games into mechanics, dynamics, and aesthetics. The "mechanics" referred to the algorithm guiding the entire game processing and consisted of game rules and goals through various mechanics, "dynamics" was the interactive behavior derived from game mechanics, and "aesthetics" was players' perception and experiences in the process as well as the fun of games. Werbach and Hunter [22] proposed DMC system, where "mechanics" referred to the basic process to promote the game schedule and players' participation, including challenge, opportunity, feedback, and winning state, and "components" was used for describing the specific elements of mechanics, containing badges, points, and billboard. Although different words were used, the statements were covered in the MDA architecture. In short, "game elements" proposed by Zichermann and Cunningham [25] and "mechanics" mentioned by Werbach and Hunter [22] are the basic compositions to guide the game processing, including the design of game rules, goals, definitions of victory or defeat, and game state feedback.

"Mechanics" might contain specific elements to construct or reinforce such mechanics, as "components" described by Werbach and Hunter [22], e.g. points, badges, levels, and billboard. "Game mechanics" indicated by Zichermann and Cunningham are actually such specific components. Components are not the fundamental elements of games that lack of such components would not affect the operation or integrity of the entire game; however, they could have the games be more diversified and become more attractive, such as inducing players with billboard or badges or opening hidden special tasks by enhancing levels. Creatively selecting and combining various game components would design more delicate and complicated game processes and enhance the novelty and charms of games. "Mechanics" is the core of entire games, and the application of various game components could make game mechanics more complicated.

Game players would generate game dynamics in the interactive process, when participating in games, to further form the aesthetic experiences of games. The attractive and inductive entertainment experiences of games are the so-called game aesthetics.

What are the differences between “gamification” and “game”? Deterding et al. [6] regarded the boundary between games and gamification being fine and fuzzy and presenting experiential and social characteristics. “Game” is the “play form” with rules and goals [3], aiming to offer entertainment. “Gamification”, on the other hand, is a kind of “design strategy” to apply game elements and mechanics [6] for promoting participation motivation with gaming fun. Gamification is the flexible combination and utilizes game mechanics and various components to enhance the playfulness; in other words, it is not necessary to design complete games for gamification [1]. Referring to the metaphor of Deterding et al. [6], various game elements in gamification could be regarded as separately bricks, which could be freely combined and applied according to objectives and needs that the more game elements would approach to a complete game. Gamification presents flexibility, and the use of game elements and mechanics might appear various combinations and changes, might design a completely mature game with rich game elements and complicated mechanics to achieve the gamification objective, and might create the gaming fun and achieve the gamification effect by simply using few game elements and mechanics.

Wu [23] pointed out gamification as a kind of design strategy that, compared to the final design result, the objective of the activity design should be the important discrimination condition. In other words, the discrimination of game and gamification should be judged with the real goal behind the activity. Accordingly, gamification might be presented with the complicated and complete form of game or simply involved in some game mechanics. In this case, could the use of some game components in the activity be called gamification, or is it gamification to include playful properties for people enjoying the participation? Barr [3] pointed out the discrimination between “game” and “play” that there were definite rules and goals in games, with which the best and worst performance was defined; players pursuing the better state and exploring and performing under preset rules were the aesthetic perception of playfulness, challenge, and sense of accomplishment in games [11]. Consequently, gamification is not randomly developed playfulness to create entertainment experiences, but applies game components and mechanics to set definite participation rules and goals for the gaming fun. By reviewing the previous gamification cases, they contained certain rules and goals. For example, Starbucks used the mechanics of checking in Foursquare for exchanging badges as the game rule, and had the goal of exchanging collected badges with preference. In this case, regardless the simple or complicated activity or the number of game components or mechanics, definite game rules and goals were the basic conditions to achieve gamification. Yeh [24] pointed out three major differences between game and gamification. First, “game” was essentially a kind of playfulness, while “gamification” was a design strategy. Second, the development of games aimed to provide entertainment value, while the entertainment value of “gamification” was to increase motivation and have activities without gaming goals become more attractive. Third, gamification created fun by flexible combination and various game components and mechanics, rather than designing a game with complete structure. Nevertheless, definite rules and goals were the lowest standards to construct gamification.

3 Analyzing Gamification Design from the Marketing Dimension

Gamification design is further analyzed with Akito [1] research theory of enhancing marketing, as following. (1) Right sense of challenge: With the picture or stage design, the game level design has the players unconsciously learn the behaviors in games. The users perceive that they have their own choices; indeed, those are specific actions arranged in games. The picture design of Mario is the best example. Regarding automatic adjustment of levels, too difficult or too simple games would tire players that games with moderate difficulty should be designed. (2) Faster and more definite message response: Instant message should be responded in short time. The clarification of message responses and the response elements of badges, levels, and status should clearly remind the players. (3) Diversity of message response: Same stimulations would tire people. Difficult and simple game structures should be designed, and the changes of music and images could be added so that the players are not tired of seeing the same pictures and hearing the same sound. Besides, a game without definite ending time would tire players that special activities could be regularly held. (4) Adjustment of structure: The “strategy”, which is merely presented in the game, needs to be specially introduced to the game to enhance the gaming fun. The stop of strategies and the balance of game adjustment could prevent the non-default functions in the game from being the tricky tool for players. Other skills like the design of interface, the structure of game introduction, and the design of exchange are also important. Foursquare is the most famous and successful gamification case of “incentives drive”. The users check in the platform for badges (or points) and might possibly become “mayor”, who could enjoy free coffee (Prince, 2013). In order to have the users understand Dropbox and carefully browse the website and message board, Dropbox designed Dropbox Quest in May 2014, in which the one who beat the game the most rapidly, could acquire more space or gifts [10]. Nike + Running allowed joggers uploading the mileage to FB; it was the gamification case to accumulate sense of accomplishment, create sports motivation, and acquire the sense of conquest.

Kapp [13] revealed that games offered alternative experiences to simulate real learning opportunities. “Accepting failure” is an element of gamification. In most learning environments, it is considered that failure should be avoided. It explains that it is not encouraged to try error learning in traditional environments. Learners could not realize the reasons for wrong answers or incorrect results and possible way to make improvement, but are simply informed the failure. Failure should be accepted, which is an important part of gamification design [13]. Another element is interest curve, which is the process or sequence of events in the gaming process, could help players continuously engage in games, and master the players’ interests in different parts of the game. The third element is storytelling, which allows users engaging in the story to achieve the goal of educational entertainment. The last element is feedback, which should be rapid and instant. Feedback is a primary element in learning processes. Feedback with high frequency and targets could assist in efficient learning [13]. The common application of gamification is the scoring system, e.g. points, levels, and achievement, and then education or working situations [17]. Such mechanics could

enhance users' use of services and change of behaviors because of external rewards [25]. As there is the word "game" in gamification that it is often misunderstood as playing; as a matter of fact, the application is just a minimum element in games, i.e. scoring system, and there are goals behind games [17].

Akito [1] pointed out the innovation principles of gamification design. (1) Reinforcing relationship: The major strength of gamification is to reinforce the relationship with customers and continuously offer services for customers. In order to reinforce the relationship with customers, what customer behaviors need to be changed? Such a thought might be combined with the creativity of gamification. In addition to retail stores and restaurants, language cram schools, beauty parlors, and clinics could reinforce the relationship with customers through gamification to change certain business models. (2) Visibility of message response: Are there any actions to have message responses be more definite? Could message responses be automatically responded through computer systems? Could it be measured with quantitative data? For instance, Denkimter successfully changed electricity meters into power message responses for players. In other words, the faster and more definite message responses would better excite players. (3) Analysis of addictive action: A lot of people addicted to certain affairs, e.g. fishing, fashion trend, or making dishes, are similar to addicted to games. Any addictive things could be analyzed. In such action processes, are there any prompts or clues? Trying to decompose each element in the process must have certain "addictive" motivation. Such "motivation" could be gamified for people to experience. (4) Paying attention to the change of technology: Low costs and high popularity of new sensors, convenience of smart phones, and the expansion of gamification resulted from technology innovation are predictable. For example, when "smart meters", which present the function of telecommunication, are popular and could be used for producing low-cost games. Moreover, when electric vehicles are popular, the game of reducing the emission of carbon dioxide would attract more people to join in. (5) Improvement of game rules: Foursquare and Level UP (developed by SCVNGR) are user positioning games developed via the locations of restaurants, but present distinct game rules. Foursquare allows people gaining badges or points by walking in and checking in the shops, while Level UP, added in missions and exploratory game elements, allows gaining points by walking in the stores and checking out that it is a game architecture with double rules. It is also a good idea to seek for feelings or clues, as making a new game, when intending to improve game rules. (6) Incorporating game rules: For example, there are various game rules for the games of calling, raising money, sending e-mail in "My Obama", aiming to have Obama win the president election. Reviewing the history of games, there are multi-directional rules in games dividing labors and incorporating with each other. (7) Considering from business model: The pioneer game enterprises successfully construct business models in new fields, but there are some failure examples. Are there any ways to acquire new users? Where are the profits? How to change the method to raise money? Reconsidering the improvement from such existing business models is also a good method. By using certain service games, the more trial users show the more business opportunities.

4 Analyzing Gamification Users' Audience Pleasure Model from the Aspect of Communication Studies

From the aspect of communication studies, Chang [5] mentioned four characters of gaming behaviors, including “non-utilitarian”, “autonomy”, “rule-based”, and “quantitative result”, so that the pleasure essence is hidden in the gaming behaviors. The consumption behaviors in games are the autonomy of users' self-willingness, which is purely the viewpoint to experience gaming behaviors and non-real interests (non-utilitarian). Moreover, definite rule reference and actual behavioral outcomes (quantitative results) have the gaming behaviors full of intrinsic pleasure. Online-game audience (users) pleasure model contains the following four types. (1) Controllability pleasure, which is affected by complexity and players' interaction. (2) Sociability pleasure, including sense of belonging, intimacy, and sense of control. (3) Narrativity pleasure, which is influenced by story aesthetics and stories. (4) Performance pleasure, the imagination to extend and reinforce the real world. Among such four types of pleasure, controllability pleasure and sociability pleasure are the most common and the most important, while narrativity pleasure and performance pleasure are not the common experiences of each user. Narrativity pleasure is related to the aesthetic presentation of texts and the story structure, has to cross over the threshold to generate controllability pleasure, and can move around the game world. Performance pleasure, on the other hand, is related to the extension of daily life experiences, is users' presentation different from the real identity position and another ideal ego, often complements the shortcomings in the real world, and reinforces and practices the inner desires and imagination. Similar to narrativity pleasure, users' experience descriptions of performance pleasure are obviously less than controllability pleasure and sociability pleasure. Such four types of media pleasure are not single and exclusive media experiences; they often appear with “compound” and interlock with each other to commonly reinforce the audience's pleasure. The most common and the strongest interlocking model is the compound of controllability pleasure and sociability pleasure [5].

5 Analyzing the Application of Gamification to Websites from the User-Centered Human-Computer Interaction

Gamification aims to have players engage in tasks and encourage desirable behaviors [17]. Zichermann and Cunningham [25] defined gamification as the thinking process in games and the utilization of game mechanics allowing users engaging in and solving problems. Based on the above definition, Nicholson [17] proposed three application theories to construct user-centered meaningful gamification and to have users perceive the fun of tasks and really establish internalized experiences. These could be explained aiming at the possible effect of external motivation induced by reward mechanics.

1. Universal design for learning: Universal design for learning came from education, aiming to have designers develop the curriculum contents suitable for diverse learning groups. Various methods could be utilized for learning, rather than examinations or oral reports [21].

2. Organismic integration theory: Organismic integration theory explained how external motivation integrated activity into personal self-perception. Having users identify the goal being meaningful could better generate the autonomous behaviors, such as connecting users' goals and value. Too much external motivation might have users appear negative perception. To avoid such a situation, it was necessary to have a user appear meanings on the game contents.
3. Situational relevance and situated motivational affordance: Situational relevance expected to involve in users. Situated motivational affordance [6] came from the motivation affordability theory. Merely when a user's background and points of view conformed to the system could the user be induced the motivation by the system to satisfy the motivation need, like ability, autonomy, and relatedness.
4. Player-generated content: The idea of user-generated contents was from the game research, "Gaming 2.0". "Second life" was the game to achieve the idea. The players constructed more than one game, i.e. developing a system, which allowed users modifying the game at any time and developing the content. Such an approach could better have users set the goals.

Jensen [11] also proposed to design meaningful games, which had users' experiences in priority, related achievement with individuals, applied narrative power, and stressed on users being "playing", i.e. related to users' situations. It is important to incorporate situational contexts in gamification design. Deterding [6] indicated that it was a blind point in gamification design to ignore situations. Prince [18] also revealed that it was not interesting to remove game elements and be in non-gaming situations. Readers might separate from daily life when they were forced to play, but were not really playing. Considering that users' situational contexts could present players' autonomy, autonomy is one of motivation needs. Ability presentation is another motivation; and, social is the last motivation. Wikipedia is the example applying such motivation needs.

6 Relevant Models Applying Gamification to Websites

From the aspect of psychology, Przybylski, Rigby, and Ryan [19] constructed the game-participation motivation model, which discussed the relationship between users' motivation and satisfaction. They compared satisfaction elements (competence, autonomy, relatedness) with motivation elements (sense of accomplishment, social sense, immersion), trying to find out the factors in the achievement of user behaviors. The economic model constructed by Hamari and Eranti [8] defined sense of accomplishment as symbolic, completely logic, and rewarding. From the aspect of business service, Aparicio et al., [2] constructed four procedures for the recyclable gamification process and defined major objectives, minor objectives, selection of game mechanics, and analysis of efficiency. Gamification MDA (mechanics-dynamics-aesthetics) model [10] was constructed based on the relationship between users' experiences and designers' intention and was the mix of rules, systems, and pleasure, where the pleasure perception was associated with the perception of aesthetics. A game-participation motivation model was constructed from the aspect of psychology [19] to discuss the

relationship between users’ motivation and satisfaction. The research compared satisfaction elements (Competence, autonomy, Relatedness) with motivation elements (sense of accomplishment, social sense, immersion), intending to find out the factors in the achievement of user behaviors. From the aspect of economy, Hamari and Eranti [8] constructed the economic model and defined sense of accomplishment as symbolic, completely logic, and rewarding. Nonetheless, from above gamification-related literatures, user experience design has not been used as the core to discuss whether the application of gamification can enhance the interdisciplinary model with effective marketing. Accordingly, a “model applying gamification to networks for promoting marketing” is constructed in this study to enhance users’ experiences.

7 Construction of a Theoretical Model

The application of users’ experiences in human-computer interaction, theory of communication studies, and theory of experience aesthetics could possibly improve and reinforce the application of gamification design to website experience design. From above literature review, it is found that pleasure experiential modules in communication studies correspond to users’ experiences in human-computer interaction and it is possible to promote experiences to pleasure, satisfaction, sociability, and learnability. From the research on human-computer interaction, users’ experiences cover users’ objective (usability) and subjective psychological perception, and the application of pleasure experiential modules in communication studies to network interaction could generate aesthetic experiences, meaningful experiences, and emotional experiences

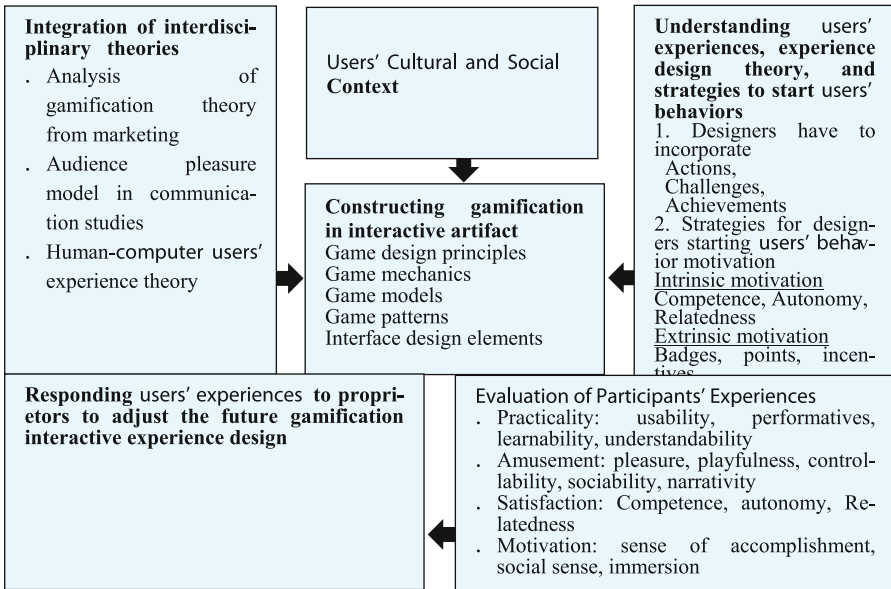


Fig. 1. A model of applying gamification to networks for promoting marketing

(controlled pleasure experience, sociable pleasure experience, narrative pleasure experience, performative pleasure experience). It is found in this study that the integration of gamification design, marketing knowledge, users' experiences in human-computer interaction, and theory of communication studies could improve and reinforce online marketing efficiency and promote users' experiences. For this reason, the core procedures for the model applying gamification to online marketing are organized, according to literature review. Step 1: Focusing on users' cultural and social context. Step 2: Understanding users' experiences and experience design theory and starting the strategy of user behaviors. Step 3: Constructing interactive artifact. Step 4: Applying gamification to networks for enhancing the evaluation of marketing efficiency. The detailed explanations are shown in Fig. 1.

8 Conclusion

1. Users' Cultural and Social Context

User-centered design has gradually been emphasized in past years. Antin [7] mentioned that the design of gamification systems or platforms could consider users' social and psychological needs and the background context, the meanings of games to them, and individual differences. When such considerations are taken into account for gamification design, a satisfactory and popular system, which could better have users engage in and feel being supported, could be developed.

2. Understanding users' experiences, experience design theory, and strategies to start users' behaviors

- Integration of designers: actions, challenges, achievements.
- Strategies for designers starting users' behavioral motivation

Intrinsic motivation: competence, autonomy, relatedness.

Extrinsic motivation: badges, points, incentives.

3. Constructing gamification in interactive artifact

Game design principles, Game mechanics, Game models, Game patterns, Interface design elements.

4. Evaluation of Participants' Experiences

- Theory of human-computer interaction could be applied to practicality: e.g. usability, performatives, learnability, understandability.
- Aesthetic experiences and theory of communication studies could be applied to amusement: e.g. pleasure, playfulness, controllability, sociability, narrativity.
- Theory of psychological motivation could be applied to satisfaction: e.g. competence, autonomy, relatedness.
- Theory of psychological motivation could be applied to motivation: sense of accomplishment, social sense, immersion.

A theoretical "model applying gamification to networks for promoting marketing" is constructed in this study. The following dimensions are taken into account for

constructing such a model, including culture and social context, motivation model from the aspect of psychology to discuss user satisfaction elements (competence, autonomy, relatedness) and motivation elements (sense of accomplishment, social sense, immersion), “theory of pleasure experiential modules” in communication studies, “users’ experiences” in human-computer interaction, and theory of experience design, to construct the interactive design entity, further practice users’ real experiences, responses, and evaluation, and respond users’ experiences to the proprietor for adjusting the future gamification interactive experience design entity. It is a recyclable process. The constructed model is a phase study in the entire research. There are successive experimental steps (expert interview, user survey, questionnaire interview) to collect data and validate the practicability of this model. The expected benefits of this research are to incorporate gamification design into online marketing communicated proprietors, researchers, and designers for effective design suggestions and to offer users with pleasant use experiences.

References

1. Akito, I.: Playing games from thinking, design to marketing: gamification time. China Times, Taipei City (2013)
2. Aparicio, A.F., Vela, F.L.G., Sánchez, J.L.G., Montes, J.L.I.: Analysis and application of gamification. *Proc. Interaccion* **12**, 1–2 (2012)
3. Barr, P.: Video game values: play as human-computer interaction. Doctoral Dissertatio. Victoria University of Wellington (2008)
4. Brockmeier, J.: Gartner Adds Big Data, Gamification, and Internet of Things to Its Hype Cycle (2011). <http://www.readwriteweb.com/enterprise/2011/08/gartner-adds-big-data>
5. Chang, Y.: Experiential pleasure of online gamers. *Chin. J. Commun. Res.* **19**, 61–95 (2011)
6. Deterding, S., Dixon, D., Khaled, R., Nacke, L.: Gamification: toward a definition. CHI 2011, Vancouver, BC, Canada (2011)
7. Deterding, S.: Gamification: designing for motivation. *Interaction* **19**(4), 14–17 (2012)
8. Hamari, J., Eranti, V.: Framework for designing and evaluating game achievements. In: DiGRA 2011: Think Design Play, pp. 1–20 (2011)
9. Hamari, J., Koivisto, J., Sarsa, H.: Does gamification work?: a literature review of empirical studies on gamification. In: Proceedings of the 47th Hawaii International Conference on System Sciences, Waikoloa, HI, USA (2014)
10. Huling, R.: Gamification: Turning work into play. H+ Magazine (2010). <http://hplusmagazine.com/gamification-turning-work-play/>
11. Hunicke, R., LeBlanc, M., Zubek, R.: MDA: a formal approach to game design and game research. In: Proceedings of the AAAI Workshop on Challenges in Game AI, p. 4 (2004)
12. Jensen, M.: Engaging the learner: gamification strives to keep the users interest. *T + D* **66**(1), 40–44 (2012)
13. Kapp, K.M.: Games, gamification, and the quest for learner engagement. *T + D* **66**(6), 64–68 (2012)
14. Marczewski, A.: Gamification: A Simple Introduction & a Bit More. Amazon ebook (2012)
15. Markoff, J.: In a Video Game, Tackling the Complexities of Protein Folding. *The New York Times* (2010). <http://www.nytimes.com/science/05protein.html>
16. McCormick, T.: Anthropology of an idea gamification. *Foreign Policy* **201**, 26–27 (2013)

17. Nicholson, S.: A user-centered theoretical framework for meaningful gamification. In: *Games + Learning + Society 8.0*, Madison, WI (2012)
18. Prince, J.D.: Gamification. *J. Electron. Resour. Med. Libr.* **10**(3), 162–169 (2013)
19. Przybylski, A.K., Rigby, C.S., Ryan, R.M.: A motivational model of video game engagement. *Rev. Gen. Psychol.* **14**(2), 154–166 (2010)
20. Raymer, R.: Gamification: using game mechanics to enhance elearning. *eLearn Mag.* (2011). <http://elearnmag.acm.org/archive.cfm?aid=2031772>
21. Rose, D.H., Meyer, A.: *Teaching every student in the digital age: universal design for learning* (2002)
22. Werbach, K., Hunter, D.: *For the Win: How Game Thinking can Revolutionize your Business*. Wharton Digital Press, Philadelphia (2012)
23. Wu, D.: From game to gamification: preliminary research of gamification marketing theory. *Mass Commun. Res.* **124**, 215–251 (2015)
24. Yeh, N.: To establish meaningful gamification in library services. *J. Libr. Inf. Sci.* **40**(2), 67–76 (2015)
25. Zichermann, G., Cunningham, C.: *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps*. O'Reilly Media, Sebastopol (2011)