Empirical Evaluation of Game Components Based on Learning Theory: A Preliminary Study

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Abstract : Gamification refers to a technique that applies game elements to non-gaming elements, such as education and exercise, to make people more engaged in these behaviors. The purpose of this study was to identify effective elements in gamification for changing human behaviors. In order to accomplish this purpose, a survey based on learning theory was developed, especially for assessing antecedents and consequences of behaviors, and 8 popular and 8 unpopular games were selected for comparison. A total of 407 adult males and females were recruited via crowdsourcing Internet marketplace and completed the survey, which consisted of 19 questions for antecedent and 14 questions for consequences. Results showed no significant differences in consequence questions between popular and unpopular games. For antecedent questions, popular games are superior to unpopular games in character customization, play type selection, a sense of belonging, patch update cycle, and influence or dominance. This study is significant in that it reveals the elements of gamification based on learning theory. Future studies need to empirically validate whether these factors affect behavioral change.