Game design is a rigorous practice rife with complexity. The design of learning games is similarly complex to the design of their entertainment-based relatives. This complexity is partially due to the many interacting components that comprise games. The impacts of these individual components are not well understood. Advancing the understanding of how such component parts contribute to the formed game will inform decisions related to their inclusion and subsequent design within games. Achievements and narrative are two such components. They have been examined within gamified systems, but little research has studied them within the context of a serious game. The interactions between such elements and other game elements could produce results that diverge from the results of their use in isolation of a complete gaming framework. This dissertation selectively incorporates or excludes narrative and achievements within a two-dimensional platformer serious game to understand their impact on learning, flow, engagement, narrative transportation, and intrinsic motivation. Conditions are examined individually as well as in a combined condition. A control condition is maintained for comparison. Results indicate that narrative and achievements were not effective in improving the effectiveness of the game. Potential causes are discussed in tandem with the implications for the design and integration within a gaming framework. While the manipulations did not improve effectiveness, the game was responsible for substantially increased knowledge acquisition, as determined by pre and posttest results.

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The public is welcome to attend.