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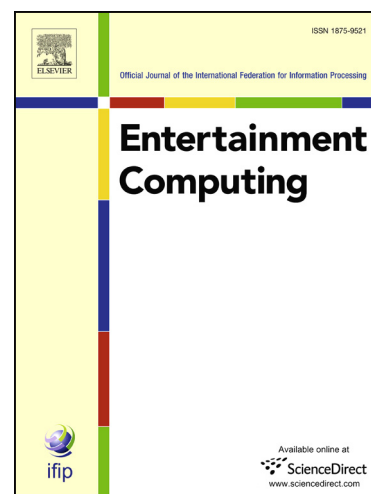
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Interactive Storytelling in a Mixed Reality Environment: The Effects of Interactivity on User Experiences

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Abstract. Interactive storytelling in a mixed reality environment merges digital and physical information and features. It usually uses an augmentation of the real-world and physically-based interaction to create an immersive experience that corresponds to the dramatic storyline of the interactive narrative influenced by the actions of the user. Immersiveness is a crucial aspect of such an installation, and can be influenced by multiple factors such as video, sounds, interaction and, finally, the density of all combined stimuli. We used one of the stages from our interactive ALICE installation to investigate immersiveness and its contributing factors in a between-group design with a special focus on the effects of interactivity, and the feedback and feedforward stimuli of the environment on the users' experiences. The study was carried out with 41 participants and the results showed that immersiveness not necessarily depends on the modality of stimuli, but instead on their time-density.

Keywords: interactive storytelling, mixed reality, immersiveness, user experience

1 Introduction

Interactive storytelling in a mixed reality environment merges digital and physical information and features. It usually uses an augmentation of the real-world and physically-based interaction. The dramatic storyline of the interactive narrative is influenced by the actions of the user. The participants are engaged in an interaction taking place in a real physical environment that does not involve direct use of a computer and interaction devices.

Dow [15] addresses three experiential pleasures of immersive and interactive stories: presence, agency, and dramatic involvement. The features of the medium that can be manipulated by the design are: perceptually immersive interfaces,

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