Chapter 20

Understanding Serious Gaming: A Psychological Perspective

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ABSTRACT

This chapter argues the importance of understanding the process of serious gaming, i.e. playing a game with a purpose other than solely entertainment. Taking a psychological perspective, it focuses on the effects of the game rather than the game itself. Emphasis is put on the experience of enjoyment as a core element of a successful entertainment gaming experience, which, in turn, is a prerequisite for a successful learning experience. To identify enjoyment factors in gaming, a hierarchical model is presented which is based on empirical evidence. Based upon the Entertainment-Education theory, the authors propose a paradigm shift from motivation for game playing to implicit educational goals in serious games. A successful blending of entertainment experiences with educationally enriched content is assumed to be mediated by the experience of presence within media. Furthermore, storytelling and character development as well as socially shared experiences are identified as valuable areas for future serious game development.

INTRODUCTION

From a social science or, more specifically, a psychological perspective “serious games” do not exist. The seriousness of a game must be determined by the experience of the user instead.

The notion that a distinct category of applications would exist outside a user’s experience is not consistent with a social science philosophy. In fact, a commercial game that enriches a player’s knowledge of any valuable content can no doubt be serious and desirable in its effect. We hereby argue that in principle any game can be a serious game. In contrast, an acclaimed serious game does not
necessarily result in educational impact at all. The genre itself is mainly driven by design purposes or content advocates. But the development intention does not necessarily match the effect of the game play. The effects, however, may be more or less educational or entertaining, or possibly even both. Consequently, social scientists do not investigate serious games but the processes, mechanisms, and experiences involved in serious gaming.

This chapter starts with a definition of play and games and elaborates on the key factors that define them, e.g. free, separate, uncertain, unproductive, governed and make-believe (Caillois, 1957). Next we will touch upon the seeming contradiction of being playful and serious at the same time, building on the assumption that enjoyment is at the core of an entertaining gaming experience and needs to be harvested if serious gaming is to be successful. As enjoyment itself is a complex construct it requires differentiating between various qualities associated with serious gaming. The “Big Five”, a hierarchical model of game enjoyment developed on the basis of empirical evidence, is presented. In the following section we turn to the educational component embedded in games and how this component is linked to the entertainment experience. A summary of several theoretical models of Entertainment-Education is given that describe how to connect enjoyment with education. In these models, the gaming experience becomes the explicit motivation for playing the game, while the educational goals remain rather implicit. However, even an enriched blend of meaningful content with enjoyable game play may fail to elicit the desired learning response in some players. Special emphasis will therefore be given to the limitations of motivation for learning, learning goals, competing contexts and selection. We hypothesize that the key to a successful blend of entertainment with education lays in the experience of non-mediation and intrinsic motivation, facilitated by the experience of presence. The most commonly found forms of presence, spatial, social and self presence, are briefly discussed. Finally, two valuable areas for future game development are put forward: (1) storytelling and character development, and (2) socially shared experiences. A short elaboration on the relevance of narrative structures and character development in serious gaming will be given.

BACKGROUND

When the revenue of digital entertainment games passed the revenue in film production in the United States of America in 2004 and games became the fastest growing segment in the entertainment industry (ESA, 2004), advocates, teachers, and politicians alike were wondering how the interest in games could be channelled into educational domains. The enthusiasm in game play observed particularly in younger users could, so the assumption goes, be harvested for more serious purposes than merely entertainment. Academic education, language skills, health related knowledge or appropriate attitudes and behaviours may be better and more efficiently taught using game technology. Game-based learning seemed to be the ultimate pathway not only to counteract any detrimental effects of “non-serious” games, but also to reach out to populations on whom rather traditional educational efforts were lost, to facilitate the educational impact in general or to enhance it in providing, for example, opportunities for deeper learning. The U.S. military was one of the first agencies recognizing the inherent potential of games and invested significant funds for new developments, which have been tremendously successful (e.g., America’s Army). At the same time, education for children within and outside the curriculum was targeted by less economically powerful agencies such as schools, museums, or small companies devoted to enriching learning experiences for children and adolescents. Their attempts resulted in much less sophisticated games than developed by the US military that often did not fulfil the promise of an engaging learning ex-