Chapter 5
Ethics in the Design of Serious Games for Healthcare and Medicine

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ABSTRACT

This chapter discusses (1) what is required to design games that are ethical and (2) the integration of ethico-legal perspectives related to the learning outcomes in the design of serious games for healthcare training, and the challenges around both these goals. An interdisciplinary perspective is taken and evidence from medicine, healthcare, psychology, and computer science is applied in discussing the identified issues and in developing recommendations for future research and development.

INTRODUCTION

As outlined in the abstract, the purpose of this chapter is to address the issues around the integration of ethical issues in designing serious games and to consider the issues around developing them to ensure they are ethical.

Any technology-based resource which the human users will interact with should be designed and developed in an ethical manner in consideration with the accepted moral code of conduct and expected behaviours of its human users. This is to ensure engagement at moral, cognitive, and psychological levels of the users. The values of a society however, can change with time and cultural events, and this needs to be taken into account. This is increasingly recognised in the design and use of intelligent agents and robotics (Torrance, 2008; Wallach, 2008). In games with complex design, which aim to demonstrate group decision making through multi-agents, it is realised that moral, ethical, and behavioural issues need to be addressed (Machado, Miranda, Pontes, Abelha, & Neves, 2010). Wallach and Allen argue for the need to consider implementing moral decision making abilities in intelligent agents, whilst also considering the advantages and disadvantages of available approaches to achieve this (Wallach & Allen, 2005). Even though there is recognition that moral and ethical issues need to be considered in

the design of serious games for healthcare, what these issues are and the consideration of the challenges of integrating ethical aspects in relation to the game's learning outcomes have been given little attention.

The issues presented here are identified from critical reflection on the author's experience and research evidence. They are then discussed in terms of published evidence in medicine, healthcare, psychology, and computer science.

What is Ethics?

Before ethical issues in the design of serious games can be considered, what ethics is, needs to be defined. Ethics is a system of moral principles and a branch of knowledge inquiry that defines what is good for individuals and society. Morality is the set of principles concerning the distinction between right and wrong or good and bad behaviour (Benn, 2004). Such principles vary with the evolution of society.

It is the professional, ethical responsibility of all stakeholders involved in the design, implementation, and evaluation of serious games in Healthcare to integrate ethico-legal aspects into any serious game they design in an appropriate, context specific manner. So why consider ethics in games? Are the challenges of integrating ethical issues in a serious game different to integrating ethical issues in the design of any other entertainment or learning resources? It is reasonable to expect that some issues may be specific to serious games, but other issues discussed here may also be applied beyond the serious game context. Serious games are a relatively novel innovation in education and training. Every such new endeavour requires the systematic consideration of specific issues in order that the development of these innovations happens in accordance with maintaining professional responsibility and good practice. If we agree that considering the role of ethical issues in the design and development of serious gaming is the professional responsibility of all involved

stakeholders, then this will lead to a number of other key questions: (a) what requirements are there in designing an ethical serious game? and (b) how are serious games designed which integrate what are considered to be core ethical aspects in medicine and healthcare encounters?

WHAT REQUIREMENTS ARE THERE IN DESIGNING AN ETHICAL SERIOUS GAME?

This section considers a number of ethical requirements in the design of serious games by outlining the requirements and discusses the evidence around these requirements. Where possible, the discussion is developed in the context of clinical examples.

The Ethical Requirement to Design Serious Games which Adhere to Core Educational Principles

If there is evidence for a particular educational approach to promote learning over other methods, then it could be argued that games designed ethically will have taken this into account. Two key evidence-based approaches to learning are considered below as examples.

Promotion of Integrated and Spiral Learning

This is the requirement, that as much as possible, the learning outcome should be immersive; it should be situated within the appropriate context and facilitate the learner to revisit the core principles learned previously.

Constructivist theory of how people learn argues that generation of knowledge and meaning comes from an interaction between the new knowledge and existing experiences (Bostock, 1998). Piaget, who is seen as the father of the constructivist approach, has had a lot of influence

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