Chapter 9
The Role of Augmented E-Learning Systems for Enhancing Pro-Social Behaviour in Socially Impaired Individuals

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ABSTRACT
E-learning systems generally rely on good visual and cognitive abilities, making them suitable for individuals with good levels of intelligence in these areas. A group of such individuals are those with non-systemising impairments (NSIs), such as people with autism spectrum conditions (ASCs). These individuals could benefit greatly from technology that allows them to use their abilities to overcome their impairments in social and emotional functioning in order to develop pro-social behaviours. Existing systems such as PARLE and MindReading are discussed, and a new one, the Visual Ontological Imitation System (VOIS), is proposed and discussed. This chapter details an investigation into the acceptability of these systems by those working in social work and advocacy. The study found that VOIS would be well received, although dependency on assistive technology and its impact on how others view NSIs still need to be addressed by society and its institutions.

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INTRODUCTION

E-learning systems have formed part of visions of a deschooled, ‘wired’ society where the full potential of learners is realised (Buckingham, 2002). In fact, e-learning now accounts for 85 percent of the training provided in some organisations (Ettinger, Holton, & Blass, 2006). Much of this technology relies on good visual and cognitive abilities making it suitable to individuals with strengths in these areas. There has been an advance of augmented e-learning systems, which attempt to enhance the learners’ capabilities, since the beginning of the 21st century. One of these, PARLE, described by Bishop (2003) will be discussed later in this chapter, but there are others that have come about since then, such as that proposed by Kaliouby, Picard, and Baron-Cohen (2006). Such technologies are often not only augmented in that they enhance human capabilities, but also can be considered to be unified communication (UC) systems as they are often multimodal, using voice, text and video for example, to reduce human difficulties with communication (Dewing, 2009). According to Dewing (2009) these UC systems are attractive to organisations wanting to improve communications, but as much as 55 per cent of decision-makers with responsibility for UC said that “there is confusion about the value of UC.” There appears to be value in such systems for individuals with strengths in visual communications, who may be deficit in other aspects of their abilities, such as in relating to others socially and empathetically. Such individuals can be considered to have non-systemising impairments (NSIs), which consist of a range of documented conditions that medical and educational professionals have described in detail. The Diagnostic and Statistical Manual of Mental Disorders has classified one group of NSIs, namely Autism Spectrum Conditions (ASCs), as Autism Disorder and Asperger Syndrome (AS). Both these NSIs are diagnosable according to DSM-IV if the individual has qualitative impairments in social interaction and restricted repetitive & stereotyped patterns of behaviour, interests and activities. The later, AS, differs in that it is also a requirement for the individual to show no clinically significant general delay in language and no clinically significant delay in the development of age-appropriate self-help skills, non-social adaptive behaviour and curiosity about the environment in childhood. An ASC can be seen to be a condition where on receiving a social or emotional stimulus the individual with this particular NSI has difficulty in utilising the information and whose mind may not be able to deal with large amounts of these types of stimuli due to deficits in response flexibility. Response flexibility in this context refers to the ability of an individual to shift response strategies or patterns with a change in environmental contingencies (Ragazzino, 2007). Another group of NSIs are Emotional-Behavioural Conditions (EBCs), which are characterised by the individual generating excessive emotional and physical stimuli above the normal amount a typical person is able
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