Chapter 14
Differentiated Animated Social Stories to Enhance Social Skills Acquisition of Children With Autism Spectrum Disorder

Bee Theng Lau
Swinburne University of Technology – Sarawak, Malaysia

Ko Min Win
Swinburne University of Technology – Sarawak, Malaysia

ABSTRACT
This study developed a web-based social skills intervention system accessible via a tablet/laptop computer which combines differentiated instructions, social stories, multimedia, and animations. This creates an interactive learning environment which (1) allows children to learn social skills repeatedly and pervasively; and (2) promotes teacher/caretaker-parent collaborations to boost the ASD children’s social skills acquisition as, a simple logon to the portal enables parents/caretakers and teachers to view the media prepared by others; track and reinforce the skills a child has learnt at home/in school, and add his/her social stories which others can view. The prototype evaluation and observation of voluntary participants from the special education school who were treated with differentiated animated social stories demonstrates that digital-based differentiated social story interventions have made the learning of social skills more interactive, appealing and effective compared to the traditional social skill tools.

INTRODUCTION
Social communication impairment is pervasive among children diagnosed with Autism Spectrum Disorder (ASD) and participating in the respective community as a full-fledged member requires social communication skills. Ignoring this significant deficit means denying these children access to society. As such, research has been carried out to explore means and methods to help these children learn these skills. One among them is the Social Story™ developed by Carol Grey in 1991 which has acquired its

DOI: 10.4018/978-1-5225-2838-8.ch014
reputation as an effective method. This approach makes use of social stories which describe social situations and appropriate responses to these situations to enable children to learn or acquire social skills. At its inception, social stories were delivered by a teacher to one individual child face-to-face. Though effective, this requires a lot of human intervention, in this case, teachers (and parents) and time to make learning interactive and interesting. In addition, repetition is needed for the children to retain and apply what they have learned. Reinforcement of these social skills for each individual child at school is beyond what teachers can do when they are handling many children at the same time. Accomplishing this at home also requires a proper system of communication and collaboration between teachers and parents.

Given all these requirements and issues that teachers and parents may have, the authors developed a web-based social skills intervention system accessible via a tablet/laptop computer which combines differentiated instruction, social stories, multimedia and animations to create a learning environment for children to learn social skills interactively, repeatedly, and pervasively. This also promotes collaborations between teachers and parents/caretakers to boost the ASD children’s social skills acquisition. Logging on to the portal of this web-based application enables both parents and teachers/caretakers to (i) track the skills a child is learning or has learned, (ii) view and use the media prepared by teacher/caretaker/parents to reinforce the social skills at home/school and (iii) add his/her social stories to the portal so that others can view them from school/home.

This chapter presents the evaluation of digital based social story interventions implemented through web-based application prototype developed for this study and observation of behavioral responses of voluntary participants from a special school and an early intervention care center in Kuching, Sarawak, Malaysia. The first section presents background to this study which describes Autism Spectrum Disorder, social skills deficits common to children with ASD, and Social Story™ as one of the effective methods to train children with ASD in social skills and its various delivery methods to improve or increase the effectiveness of Social Story™. Against the backdrop of certain boundaries of Social Story™, the second section of this chapter presents the main focus of this study to figure out method(s) to overcome certain limitations of Social Story™ approach and improve effectiveness of social stories, and technology(s) as a catalyst.

AUTISM AND SOCIAL SKILLS

Autism Spectrum Disorders, as described by National Institute of Mental Health (2014), are a group of complex disorders of brain development which cause deficiencies in social and communication skills which are vital to human lives and to survival in the workplace. They are interactive skills learned through socialization to stimulate positive responses from people whom they interact with. The ASD problem is serious and ASD cases are on the rise. According to the report released by the Centers for Disease Control and Prevention in 2012, 1 in 88 American children have some form of ASD, a 78% increase in the number compared to that of about a decade before (Falco, 2012; Centers for Disease Control and Prevention, 2014). According to the National Autistic Society United Kingdom (2013), 1.1% of its population (2011 population census) had autism. Although no one has so far been able to identify what exactly triggers ASD, there are two factors which seem to be related to ASD: genetic factors and environment factors (National Institutes of Mental Health, 2014; Research Autism, 2015).

According to DSM-V (Diagnostic and Statistical Manual of Mental Disorders 5th edition, American Psychiatric Association, 2013), ASD is diagnosed based on two areas which are: