

## Evaluation of the Telstra Foundation iModeling Projects

### Autism and Social Skills Limitations

Social skill limitations are a defining characteristic for Autism Spectrum Disorders (ASD). For children with ASD, deficits in social skills can result in difficulties interacting with their family, peers, and teachers and such deficits can place them at risk of social isolation and rejection by peers or bullying. Consequently, numerous interventions have been developed to address social skills deficits for children with ASD.

### Improving Social Skills using Video Modeling

In recent decades video modeling has been widely used as an intervention for children with ASD and other developmental disabilities. Video modeling has been shown to be effective for teaching a variety of skills including social and communication skills, daily living skills, play skills, academic and task oriented behaviours of children with ASD, and has been shown to be an effective method for reducing problem behaviours.

### Improving Social Skills using a Group-Based Approach to Video Modeling

To date though, video modeling has not commonly been combined with a group based program, although research has shown group based programs are also an effective way of teaching social skills to children with ASD. The first *Telstra Foundation iModeling Project 1* that ran from 2009-2011 combined video modeling with a group-based social skills program and parent involvement in order to achieve positive social behaviour outcomes for children and young adolescents with ASD.

### Telstra Foundation iModeling Project 1 Evaluation

This three year project was evaluated by the Disabilities Research Unit from the School of Psychology at the University of Adelaide.

**Results:** Evaluation findings for this three year project showed that:

- The majority (79%) of participants improved their social skills during the course of a year-long program.
- Most (74%) participants had maintained these gains 3 months after the program concluded, albeit to different degrees and in different skill and behaviour areas.
- Three quarters of the parents reported that they had observed their child using their newly learnt skills in other situations and circumstances.

- Nearly half of parents reported that their child's teacher or school report had made note of improved social skills and/or behaviours.

There were a number of positive outcomes that arose for those involved in the program:

- Positive outcomes reported for the children included the opportunity to make new friends and the learning of new strategies for handling social situations.
- Positive outcomes reported for the parents of the participating children included learning new approaches for managing their child's behaviour and for teaching social skills, as well as an opportunity to meet other parents in similar situations.

**Research Implications:** Outcomes of the Telstra Foundation iModeling Project 1 highlighted areas for future development of the video modeling social skills program including the use of hand-held tablet devices such as iPads as trialled in the *Telstra Foundation iModeling Project 2*.

### **Telstra Foundation iModeling Project 2**

The iModeling App developed by Autism SA provides a program that enables parents to use video modeling at home and in other environments to support their child with learning new skills and behaviours. The second Telstra Foundation iModeling Project has incorporated this App into a social skills program that involves metropolitan participants who have used the iModeling App at home but have also attended a weekly social development group while other regional/rural participants have undertaken an Outreach program that involves the parents delivering the social skills instruction at home using the iModeling App.

### **Telstra Foundation iModeling Project 2 Evaluation**

The Telstra Foundation iModeling Project 2 has also been evaluated by the Disabilities Research Unit, and has revealed positive outcomes for many participants. The following findings relate to the children for whom social skill assessments could be conducted at each of the three evaluation time points (baseline, post-intervention, and three months following the completion of the program).

**Results:** With regard to the social skills of the children as measured using the Social Skills Improvement System (SSiS), the following results have been obtained for the two years of the Telstra Foundation iModeling Project 2 involving the use of the iModeling App,

- **Overall social skills measure:** At the completion of a year-long iModeling program, 92% of the children involved in the group-based programs and 78% of the Outreach participants (overall 89% of the children) had increased their skills to some extent on an overall measure of social skills from the beginning of the program. Of the 89% of children with scores on the overall measure of social skills that had improved, 41% were of a level considered to be a clinically significant improvement. Three

months after the completion of the program, 64% of the children who had shown improved scores on the overall measure of social skills, had maintained the improvements.

- **Social Skill subscales:** Across the two years of the program, the social skill area that most children improved on from baseline to the end of the program was Assertion (75%); however, the subscales on which the most clinically significant improvements were obtained were Engagement (70% improved their subscale score) and Communication (65% improved their subscale score).

The social skill area that the group-based children improved in most was Assertion (which includes behaviours such as asking others for information or help, standing up for yourself or others, saying when there is a problem, and responding appropriately to the actions of others). According to the social skills assessments completed at the end of the program 79% of the group-based participants improved their skills in this area, with 47% of these children improving their Assertion skills by one behaviour level (e.g., from below average to an average range of functioning) when compared to similar aged peers.

The social skill areas that the Outreach children improved in most were Communication (which includes skills such as taking turns in conversations, making eye contact, using an appropriate tone of voice, using appropriate gestures, being polite, and use of terms such as “thank you” and “please”) and Self Control (which includes skills such as responding appropriately in situations of conflict; for example, staying calm when disagreeing with someone or being teased, compromising in disagreements, controlling emotions). According to the social skills assessments completed at the end of the program 67% of the Outreach participants improved their skills in each of these areas, with 67% of these children having Communication skills that improved from below average to within the average range of functioning when compared to similar aged peers; however, only one child improved their Self Control subscale score from the below average to within the average range of functioning.

- **Problem social behaviours:** While the primary focus of the iModeling program was social skills development, improvements with respect to problem social behaviours were also noted. Common problem social behaviours for children with ASD can include not being able to take turns, making odd gestures or sounds, and getting upset when routines change. Sixty three percent of the children involved in the group-based program and 89% of the Outreach participants (overall 68% of the children) had problem social behaviour scores that had declined from the beginning to the end of the program. Behavioural improvements are likely to be associated with factors such as the child learning strategies to deal appropriately with social situations, receiving more individual attention with a focus on positive behaviours, and the parents having the skills to effectively support their child with ASD when problem behaviours occurred.

Three months after the completion of the program, 78% of the children who had shown behavioural improvements based on their scores on the overall measure of problem social behaviours, had maintained the improvements.

Parent qualitative feedback also indicated favourable outcomes associated with the Telstra Foundation iModeling Project 2. In particular, the following feedback was received:

#### **Program Helpfulness for the Child**

- 97% of parents reported that the iModeling program had been helpful at improving the social skills of their child with ASD.
- 82% of parents reported that the iModeling program had been helpful at improving the self-protective behaviours of their child with ASD (e.g., peer pressure, on-line safety, safety with others)
- 82% of parents reported that the iModeling program had been helpful at reducing the problem social behaviours of their child with ASD.

#### **Video Modeling and iModeling App**

- 85% of parents considered the video modeling as a learning tool had contributed to the changes in their child's skills and behaviours. The other important program factor reported by parents was the participation in the social group situation.
- The majority of parents reported they used the iModeling App with their child and 88% reported that they intended to continue using the iModeling App after the program concluded. The main reason provided by parents who reported that they were not likely to use the iModeling App was that they did not own an iPad.

#### **Benefits beyond the Program**

- Most parents (70%) reported that their child's teacher had commented on improvements in their child's skills and/or behaviour at school.
- The majority of parents (95%) reported that they had observed their child using the skills learnt in the iModeling program in other settings or with other people.
- Feedback following the program from the parents and children indicated that the benefits of the iModeling program for the child extended beyond the learning of new skills and included opportunities to make friends; the children improved their understanding of ASD and felt less isolated as they realised there were others in similar situations; it helped improve self-confidence and self-esteem; and the children reported that it was fun to do.

#### **Benefits for the Parents**

- Parents also reported the Telstra Foundation iModeling Project 2 led to indirect benefits for themselves and other family members including opportunities to meet and share information with others in similar situations; family members had a better understanding of ASD and the associated behaviours and ways for supporting the child to learn new skills; and the enjoyment of seeing their child successfully learn new skills and having fun.

### **Key Features of the Video Modeling Techniques**

The evaluation findings suggest that the Telstra Foundation iModeling Project 2 involving the use of the iModeling App has produced positive outcomes for the majority of participants. Video modeling techniques as used in the iModeling program incorporate key features that make it a successful learning tool for children with ASD. In particular, current research and parent feedback have indicated that:

- The video modeling captured the attention of children with ASD through the presentation of visual material on a screen that focused the child's attention and reduced distractions.
- The video modeling helped with the retention of learning as the child could watch the modelled behaviours as often as needed.
- The video modeling approach used in the iModeling program provided the child with opportunities to observe and then practice the modelled behaviours in a safe and supportive environment, with the iModeling App incorporating incentives to reward the child for repeated viewing of the material.
- The use of the video modeling allowed the children to view themselves successfully performing skills that were beyond their typical functioning level, which served to encourage self-efficacy by providing visual evidence of their capacity to be able to perform the skills.
- The use of the iPad as a learning tool was motivating for the children as they enjoyed using the iPad and as it was something that their typically developing peers also used.

### **Future Developments and Research**

Areas of future research highlighted by the evaluation findings for the Telstra Foundation iModeling Project 2 include:

- An evaluation of the capacity of parents to use the iModeling App with their child with ASD independently of support from the iModeling team in order to refine the type of training materials (e.g., training manual, sample videos showing effective and ineffective examples of video modeling materials) and level of ongoing support (e.g., on-line support) that is likely to be required to ensure successful learning and maintenance of skills.

- An investigation of the usefulness of providing similar video modeling programs at different developmental stages of childhood and adolescence (e.g., kindergarten, primary school, secondary school, and post-secondary school) to facilitate effective life-stage transitions.
- To investigate the extent to which the iModeling App could be used in school-based programs.

For further information regarding the evaluation of the Telstra Foundation iModeling Projects please contact:

Disabilities Research Unit  
School of Psychology  
University of Adelaide  
North Terrace  
Adelaide SA 5005

Phone: (08) 8313 5739 or 8313 0479  
Email: [dru.psychology@adelaide.edu.au](mailto:dru.psychology@adelaide.edu.au)