University of Southampton

Doctoral Programme in Educational Psychology

Title: To what extent can Social Stories™ be considered an effective school-based intervention and who may benefit from their use?

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Case Overview

Jack was referred to the Educational Psychology Service by the SENCo at his mainstream primary school due to concerns raised by Jack's class teacher and teacher in charge of the specialist language provision. Staff concerns focused on Jack's emotional responses to tasks he perceived to be challenging. It was reported that Jack would become visibly distressed if he was unable to complete a task or felt that he had made a mistake.

Jack's early development highlighted significant delays in his understanding and expression of spoken language. At the time of my involvement, Jack was in Year 2 attending the specialist language provision, which offered specialist support and targeted therapy to promote his speech and language development. Jack was spending approximately 50% of his school week within this environment whilst also accessing supported learning within his mainstream classroom.

During consultation with key staff and Jack's mother, it was agreed that an intervention would be considered successful if Jack was able to develop his ability to respond positively to perceived challenge and tolerate making mistakes. My involvement included consultation with staff, observation of Jack within his mainstream and specialist learning environments and individual work. This included dynamic assessment to consider Jack's response to challenge, and exploration of Jack's personal constructs and emotional understanding.

Through my work it became apparent that Jack found it difficult to ask for help from others when he began to become anxious about a task. Staff reported that Jack would frequently sit and sob when he encountered a problem, resulting in other children reporting to the teacher that he had become upset. It was also considered that Jack's difficulties with

expressive language might further contribute to his difficulties in communicating his anxiety when feeling challenged.

As part of an agreed intervention plan, a visual symbol card system was introduced to support Jack in communicating when he felt he needed help. To reinforce this, it was agreed that the use of a Social Story would be helpful in supporting Jack to understand that it is acceptable to make mistakes, and to teach the necessary skills to enable him to ask for help when he felt anxious.

Account of Literature

Social Stories

Social Stories (SS) are a popular and widely used intervention designed to address the behavioural, communicative and social difficulties associated with ASD (Hutchins & Prelock, 2013). They are highly structured and personalised, and share information about what constitutes appropriate behaviour in a specific social situation which may have previously been experienced as problematic (Styles, 2011).

SS must follow a set of guidelines for how they are developed and delivered (Gray & Garand, 1993; Gray, 2004). According to these guidelines, a SS must include several types of sentences (see Table 1).

Table 1. Social Story Sentence Types

Sentence Type	Description
Descriptive	Statements to describe the situation and people involved
Perspective	Description of the feelings and responses of others
Directive	Statements that identify an appropriate response and guide a child's behaviour
Control	Strategies identified jointly with the child to aid recall
Cooperative	Statements which identify what others will do to assist
Affirmative	Emphasise the key meaning of the surrounding statements
Partial	Portion of sentence replaced with a blank space for the individual to complete in order to assess comprehension and encourage independent thought

The authors recommended that SS should describe more than direct, and accordingly developed the Social Story ratio. This proposes that for every directive or control sentence, there should be a minimum of two descriptive, perspective, affirmative or cooperative sentences (Gray, 2004). The Social Story ratio is one of ten defining criteria used to identify what constitutes a SS (see Appendix A). However it is unclear whether the development of these criteria was informed by research evidence (Quirmbach, Lincoln, Feinberg-Gizzo, Ingersoll & Andrews, 2009; Reynhout & Carter, 2009).

Theoretical Rationale

The theoretical rationale for SS interventions relates to cognitive theories of ASD, which hold that social difficulties may be linked to deficits in theory of mind (e.g. Baron-Cohen et al., 2005) or weak central coherence (Happe, 2005). Difficulties in theory of mind may be addressed through SS, which often include the use of perspective sentences to describe the views or feelings of others. SS are also designed to emphasise the relevant details of a situation, thus addressing difficulties relating to weak central coherence. Other

elements of SS may make them appropriate for addressing a range of needs which may not be specific to ASD. For example, language difficulties may be supported through the use of visual information to enhance content, and SS may increase predictability as these are typically read in advance of a target situation (Kokina & Kern, 2010).

Evidence Base

In addition to the theoretical rationale, the relative ease of implementation makes SS an attractive and socially valid intervention option. In a survey of teachers working with children with ASD, 100% of respondents reported that they had used SS, and 93% perceived it to be an effective intervention (Reynhout & Carter, 2009).

However, despite acknowledging a range of largely positive research outcomes, reviews examining the evidence base in relation to the efficacy of SS have highlighted a number of methodological weaknesses, including lack of experimental control and maintenance data, use of single-case designs, and issues relating to implementation fidelity (Ali & Frederickson, 2006; Rust & Smith, 2006; Sansosti, Powell-Smith & Kincaid, 2004).

This report therefore aims to critically examine the literature base in relation to a number of variables which may moderate intervention effectiveness, with specific reference to participant characteristics, design, and implementation considerations.

Participant Characteristics

Although originally developed to support individuals with ASD, Gray and Garand (1993) suggested that SS may also benefit children without this diagnosis. ASD is a spectrum disorder and typically developing children may also demonstrate some of the associated difficulties in communication, imagination and social interaction (Constantino & Todd,

2003). However, few studies have investigated whether SS may be an effective intervention within this population, or whether any adaptations to their application may be required.

In a study of typically developing junior school children demonstrating behavioural difficulties, Toplis and Hadwin (2006) reported a small effect size for their target behaviour following intervention, however the study was limited by the lack of a comparison control group. SS appeared ineffective for two children in this study; the authors suggested this may be explained by a higher level of oppositional traits. A further study reported that a SS was effective in reducing aggression and increasing pro-social behaviours in a sample of three typically developing pre-schoolers (Benish & Bramlett, 2011).

More recently research has begun to focus on the influence of participant characteristics on the effectiveness of SS. For example, a multiple regression analysis found SS success to be predicted by verbal comprehension scores on the Wechsler Intelligence Scales for Children (WISC IV) in the borderline range or above (Quirmbach et al., 2009). This suggests that SS interventions may be less suitable for individuals with low verbal comprehension skills.

However, Styles (2011) acknowledges the role of social and environmental factors as well as within-child variables in influencing the effectiveness of SS, and suggests that this is an aspect warranting further investigation through their use in a variety of settings.

Design

Internal validity

While several studies have reported positive findings, it has been argued that internal validity was compromised in many cases due to the concurrent use of other intervention strategies, meaning behavioural improvements could not be reliably attributed to the SS

intervention (Styles, 2011). Consequently a number of researchers have argued for a need to establish experimental investigations of 'pure' implementations in which SS are the single independent variable (Mayton et al., 2013; Styles, 2011). However this is likely to present difficulties in practice due to the ethical problems associated with withholding an apparently successful intervention (Ali & Frederickson, 2006).

Further understanding of why SS are rarely implemented in isolation may be gained through consideration of their intended objectives. Gray (2004) emphasised that SS are not intended as a tool for behaviour change, but that the intervention operates on the principle that better social understanding will lead to improvements in behaviour and social functioning. Accordingly, Kokina and Kern (2010) highlight that it may be important to consider pre-requisite social skills which may require direct teaching, and appropriate environmental supports, to supplement the success of SS.

Measures

In examining the effectiveness of SS, it is necessary to consider the influence of specific outcome measures adopted. For example, Kalyva and Agaliotis (2009) reported that a SS intervention was effective in improving the conflict resolution skills of children with learning difficulties. However, the study lacked ecological validity as it used interviews to ask children how they would respond to hypothetical situations, thus measuring changes in intended rather than actual behaviour.

Subsequent studies have used more objectively defined observation methods to measure intervention outcomes (e.g. Benish & Bramlett, 2011). However, this study found a discrepancy between behavioural observation measures (significant) and teacher ratings of behaviour (non-significant), suggesting that questionnaire measures may lack an appropriate level of sensitivity to assess changes in targeted behaviours. An alternative explanation is that

teacher ratings may not have differed significantly in the short time frames employed. Studies employing longer time frames showed significant changes in teacher ratings post intervention (Kalyva & Agaliotis, 2009; More, 2013). This highlights the importance of allowing sufficient durations for follow-up measures and of the use of multiple measures to triangulate evidence.

A further consideration is that ratings obtained by those responsible for implementing an intervention may be subject to a positivity bias, in which participants preferentially notice behaviours which support a hypothesis of improvement (Ali & Frederickson, 2006). It would also be important to ensure that measures appropriately capture changes in the target behaviour. For example, Toplis and Hadwin's (2006) outcome measure focused on general classroom behaviour, whereas the intervention targeted sitting behaviour during lunchtimes.

In contrast to Sansosti et al. (2004), Ali and Frederickson (2006) argue for a functional rather than normative approach to assessing significant change, in which the definition of 'successful outcome' reflects what is meaningful in the lives of individual children. In this way, a change which is sufficient to allow a child to access situations and experiences which were previously unavailable is considered to be more important than achieving normative levels in identified target behaviours.

Maintenance

Early reviews noted that few studies investigating the effectiveness of SS had reported maintenance effects (Reynhout & Carter, 2006; Rust & Smith, 2006; Sansosti et al., 2004). More recently, studies have reported mixed findings, with some reporting no evidence of maintenance (Ozdemir, 2008; Sansosti & Powell-Smith, 2006) and others reporting some maintenance of positive effects (e.g. Chan & O'Reilly, 2008; Kalyva & Agaliotis, 2009; Quirmbach et al., 2009; Soenksen & Alper, 2006).

As previously stated, only some of these studies utilised SS as the only intervention strategy (e.g. Quirmbach et al., 2009; Kalyva & Agaliotis, 2009), making it difficult to establish whether positive effects are maintained following the withdrawal of SS.

Implementation

Format and Delivery

A number of studies did not report whether the intervention followed Gray's (2004) guidelines (e.g. Kalyva & Agaliotis, 2009). Furthermore, it is unclear to what extent intervention variables such as the Social Story sentence ratio may moderate effectiveness. Contrary to Gray's (2004) recommendations, a review of 16 empirical studies found that SS which deviated from the ratio by including more directive than descriptive sentences produced better outcomes than those which followed Gray's criteria (Reynhout & Carter, 2006). It has been suggested that the 'active ingredient' in SS may be the directive sentences, as these may prime the reader to identify specific contexts in which the targeted behaviour should be applied (Quirmbach et al., 2009).

Although it was originally recommended that SS contain no visual stimuli because their meaning could be misinterpreted (Gray & Garand, 1993) this view was later revised, suggesting that SS should be constructed and presented in ways that capitalise on the visual learning strengths of children with ASD (Gray, 2004). In their review of factors moderating the effectiveness of SS interventions, Kokina and Kern (2010) found that SS with illustrations were more effective than those with written text only. However, these findings were based on descriptive analyses therefore further research utilising larger sample sizes will be required to examine this aspect more rigorously.

Gray's original recommendations promoted individualising SS, but also produced generic versions. Some studies have used group designs in which it was not feasible to individualise the SS (Kalyva & Agaliotis, 2009; More, 2013). Kalyva and Agaliotis (2009) reported large effect sizes, suggesting that generic SS may be effective for children with learning difficulties.

A further related question is whether SS are more effective for particular targets of intervention than others. Consistent with the 'complexity hypothesis' (Kokina & Kern, 2010) findings by Hutchins and Prelock (2013) indicated that SS related to concrete, behavioural targets (e.g. hitting, biting, using specific words) were more successful than those relating to more complex or subtle social skills (e.g. establishing eye contact).

Styles (2011) notes that the variety of ways in which SS have been presented restricts the potential for systematic comparison of data across studies, in order to support the development of a reliable evidence base. In practice however, format and delivery methods are likely to be influenced by the individual needs and interests of students, meaning that the role of format requires further examination.

Influence of Training

In addition to participant characteristics, research has highlighted that children's relationship with the person delivering the intervention may be important to their effectiveness (More, 2013). Furthermore, findings from this study suggest that outcomes for children may vary according to the skills and experience of their teacher. However, although greater improvements were seen where the intervention was delivered by a more experienced teacher, this group also showed lower social ability scores at baseline. It would therefore be important to further investigate the role of skills and experience in effective implementation.

Studies have also varied in relation to whether the intervention was delivered by trained school staff (e.g. Benish & Bramlett, 2011; More, 2013; Toplis & Hadwin, 2006) or researchers (e.g. Kalyva & Agaliotis, 2009; Schneider & Goldstein, 2009). Across these studies, higher effect sizes were reported where the intervention had been implemented by researchers. This suggests that despite their ease of implementation, SS may be more effective if delivered by researchers than school staff, however it may also be the case that researchers implement SS with a higher degree of fidelity. Styles (2011) argues that while this may help to maintain experimental control, it is not representative of how interventions recommended by EPs are typically implemented in schools. A number of authors have suggested that while it is important that interventions are delivered by natural agents in typical settings, implementation fidelity must be closely monitored (Kokina & Kern, 2010; Mayton et al., 2013).

These findings highlight implications for developing the quality of training delivered to school staff. Furthermore, research has suggested that the process of writing SS may bring about changes in adults' behaviour. In one study, teachers reported that it helped to identify aspects of the social situation that needed to be clarified for the child and specific skills that the child needed to learn (Smith, 2001). Ali and Frederickson (2006) argue that this may in part explain the increasing popularity of SS and suggest that the evaluation of outcomes may be usefully expanded to include adults as well as children.

Implications for Educational Psychology Practice

Although research into the effectiveness of SS has initially highlighted positive effects for children with a diagnosis of ASD (e.g. Ali & Frederickson, 2006; Sansosti et al., 2004), there is a growing literature base to suggest that SS may be an effective intervention for children without ASD or related difficulties (e.g. Benish & Bramlett, 2011, Kalyva &

Agaliotis, 2009; Toplis & Hadwin, 2006). Research has also suggested that implementing SS may be beneficial in influencing the behaviour and understanding of adults (Smith, 2001).

However, a range of methodological limitations apply across studies focusing on both ASD and non-ASD populations, including lack of experimental control and concerns relating to internal validity, maintenance effects and intervention fidelity. Overall, available evidence suggests that the effectiveness of SS is highly variable, and may be more effective with some individuals, in particular conditions. It would therefore be important for future research to address the possible sources of this variability, including individual and implementation characteristics (Kokina & Kern, 2010).

When supporting the selection and implementation of appropriate interventions, EPs are well placed to provide relevant training and to work through consultation with school staff to evaluate critical intervention variables. Relevant considerations may relate to staff knowledge and experience and supporting schools to monitor implementation fidelity in order to promote optimal outcomes.

Reflective Case Commentary

Following daily implementation of the SS by school staff, it was reported that Jack was more readily asking for help, and demonstrating a reduction in distress when encountering difficult tasks.

In consideration of the available literature, I was able to reflect upon aspects which may have contributed to the success of this intervention in promoting Jack's ability to seek help in appropriate ways. In developing the SS, it was helpful to consider the existing staff knowledge base. As Jack's teaching assistant had prior knowledge and experience of delivering SS it was agreed that she would take responsibility for implementing the

intervention, in collaboration with Jack's class teacher. This is in line with findings which suggest that level of staff experience may influence outcomes for pupils (More, 2013).

In developing the SS, I was able to support school staff to consider and discuss with Jack the specific words he might use when asking another adult or child for help. This is in line with the complexity hypothesis (Kokina & Kern, 2010), which suggests that targets which are associated with clear, comprehensive and literally accurate descriptions are more likely to be effective. An additional factor was the use of images within the SS. It is likely that this may have supported Jack's understanding of the language used, given his identified language and communication needs (Schneider & Goldstein, 2009).

As is frequently the case within the literature, the SS intervention was not implemented in isolation in this case due to ethical considerations. On reflection it may have been helpful to support staff to consider additional evaluation methods in order to triangulate evidence. Overall, the intervention may be considered successful in relation to Ali and Frederickson's (2006) emphasis on functional change, through producing meaningful outcomes to improve Jack's experiences.

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Appendices

Appendix A. Gray's (2004) Social Story Defining Criteria (adapted from Styles, 2011)

A Social Story	
1	Meaningfully shares social information with a reassuring quality, and at least 50% of all Social Stories applaud achievements.
2	Has an introduction that clearly identifies the topic, a body that adds detail, and a conclusion that reinforces and summarises the information.
3	Answers 'wh' questions: What? When? Why? Who?
4	Written in the first or third person.
5	Uses positive language to identify positive responses.
6	Always includes descriptive sentences, with the option to include one or more of the remaining sentence types.
7	Describes more than directs, following the Social Story formula.
8	Tailored to the abilities and interest of its audience.
9	May include illustrations to enhance the meaning of the text.
10	Title meets all applicable Social Story criteria.