



SCHOOL-AGE CHILDREN WHO STUTTER: ATTITUDE CHANGES FOLLOWING A THINKING SKILLS PROGRAM

Joseph Agius, M.Sc., Ed.D., SLP
University of Malta, Malta

Abstract

The purpose of this study was to explore shifts in the feelings and attitudes of school-age children who stutter following a thinking skills program based on materials for the direct teaching of thinking as a basic skill. Thirty school children who stutter aged 8–12 years attending speech-language clinics in Malta were recruited to participate in the study. Fifteen children who stutter (experimental group) followed the thinking skills program while the other fifteen children (control group) were placed on a delayed program list. Results indicated a) a more positive attitude to communication with a significantly lower score ($p < 0.05$) on the Communication Attitude Test (CAT) (Brutten, 2004a) was recorded by the children who stutter in the experimental group b) no significant interaction effect ($p > 0.05$) was recorded in the Speech Situation Checklist Emotional Reaction (SSC-ER) (Brutten, 2004b) pre- and post- program scores of the children in the experimental group and control group c) elaboration, with increased number of statements, was noted in the post-program self-character sketches of the majority of children who stutter following the thinking skills program .

Educational objectives: The reader will be able to: (1) discuss a recent research study exploring shifts in attitudes of school-age children who stutter following a thinking skills program, (2) describe a treatment strategy aimed at broadening perception to improve positive attitude in school-age children who stutter, (3) summarize the outcomes that are observed when using a thinking skills program in this study.

Keywords: Stuttering: school-age; treatment; thinking skills program.

1. Introduction

Research has shown that children who stutter view speaking more negatively and experience more negative speech-related emotions than do non-stuttering peers (De Nil & Brutten, 1991). Recently, Murphy, Yaruss & Quesal (2007: 121) described some treatment strategies that can be used by clinicians to “address negative affective, behavioral and cognitive reactions that school-age children who stutter may experience as part of the disorder”. These strategies included desensitization to stuttering, cognitive restructuring, self-acceptance, purposeful self-disclosure, and a combination of both fluency enhancing and stuttering modification approaches. A negative perception of one's own ability to communicate may have an impact on self-esteem if the individual values interpersonal communication. There is also consensus among clinicians and researchers working with people who stutter that speech disorders can have adverse effects on self-perception and, specifically, on self-esteem (Bajina, 1995; Luper & Mulder, 1964; Shames & Rubin, 1986; Starkweather, Ridener-Gottwald & Halfond, 1990).

Ramig and Dodge (2005:9) note that “several months after the onset of stuttering symptoms, the child's negative reactions to speech seem to become more difficult to reverse without direct intervention”. The relationship between mal-attitude and stuttering has been studied fairly extensively

using the Communication Attitude Test (De Nil & Brutten, 1991) and the Speech Situation Checklist (Vanryckeghem and Brutten, 2001). Practical strategies for helping children who stutter change their feelings and beliefs are widely available, but many speech-language pathologists appear uncomfortable targeting such goals (Murphy, Scott Yaruss & Quesal, 2007; Cooper & Cooper, 1985, 1996). Chmela and Reardon (2001) published a workbook with practical strategies to help children who stutter change their feelings and beliefs about stuttering. They aptly note that “the amount and type of stuttering may not be in direct relationship to the presence of negative feelings and beliefs the child is experiencing” (p.2). The book integrates attitudes and feelings as part of stuttering therapy. They claim that stuttering therapy with school-age children should aim to help them become good communicators. Clinicians should “help the child find a balance between modifying speech on the one hand and developing and maintaining healthier attitudes and feelings on the other” (Chmela & Reardon, 2001:1). Reitzes (2006) published an interesting book with activities, insights and ideas aimed at helping children who stutter identify and explore stuttering, talk about stuttering, and modify and reduce their stuttering so that communication is easier. Teaching of thinking as a skill is used in this study to explore whether these thinking tools would help children broaden perception to develop more positive attitudes towards themselves and towards communication.

1.1 Teaching thinking skills to children who stutter

In 1991, an eighteen lesson training program was developed by two speech-language pathologists, R. Nagel-Groen and A. van Eupen, from the Netherlands. It was mainly aimed at the cognitive aspect of stuttering in children who stutter between the ages of six and twelve. The program ‘Think Wise!!’ (van Eupen & Nagel-Groen, 1996) (in Dutch: ‘*Denk-Wijzer!*’) was “based on principles of learning theory and uses behavior therapy techniques in a concrete and playful manner and has been designed as a clear guide for the structured treatment of cognition and attitudes of a child with regard to speech” (van Eupen & Nagel-Groen, 1995 & 1996). Preliminary results on the effectiveness of the program suggested that “a specific cognitive training program like ‘Think Wise!!’ can be very effective as part of the total stuttering treatment” (Liefink, Lechner-van de Noort, & Stournaras, 1995). A search for literature on concluding results on the effectiveness of the ‘Think Wise!!’ program indicated no reports in the English language.

1.2 CoRT 1- Direct Thinking Skills Tools

The Maltese born Edward de Bono is widely recognized as the world’s leading authority on the direct teaching of thinking. Perception is a very important part of thinking. De Bono (2005) argues that “in our obsession with logic we have never taught perception”. Although in ordinary life the perception aspect is more important, “much attention has been paid in the past to the logic of thinking” (de Bono (1994: 11). The CoRT program was written in 1972 (de Bono, 1986). While Dr. Edward de Bono was at the Cambridge University in the United Kingdom, he formed the Cognitive Research Trust from which the abbreviation, CoRT is derived. The CoRT program (de Bono, 1986) is used widely around the world and teaches perceptual thinking. The program teaches thinking skills through the use of thinking ‘tools’ in a formal, focused, and deliberate manner. A search of the literature on the use of direct thinking skills tools with children who stutter did not yield any studies. In this study, the CoRT tools formed the framework of the ten session program. Each session discussed a thinking tool and children experienced using the tool in a focused manner.

1.3 Overview of the ‘Think Smart, Feel Smart’ Program

An intervention program for school-age children who stutter was devised mainly based on the researcher’s clinical experience working with children in group therapy sessions. The program integrated relaxation, thinking skills tools and desensitization exercises. The relaxation component in

the ‘Think Smart, Feel Smart’ program included both physical relaxation (Gregory, 1995) and guided language visualisation using ‘the guided fantasies: the sea urchin’ for mental relaxation (Marshall-Warren, 2004). The ten week program (an integration of CoRT 1 tools with stuttering intervention) consisted of ten group sessions of ninety minutes duration with the participation of 15 children. The content of the program included three components: Relaxation exercise based on the work of Edmund Jacobson (Gregory 1995) and guided language visualization exercise (Marshall-Warren, 2004); Thinking Skill Tools based on CoRT 1 (de Bono, 1986) and a desensitization exercise. The sessions followed the CoRT 1 model of working with children and combined whole group instruction sessions with small group work and practice. Each session was highly structured and included a relaxation exercise component of 15 minutes followed by a direct thinking skill tool component of 45 minutes. A 15 minute break was followed by a desensitization exercise component of 30 minutes. The Maltese language was used as the medium of instruction. A sample of session one is found in Appendix A. The timetable for the ten session program was:

<p>Week 1: Session 1</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking tool: <i>PMI (Plus, Minus & Interesting)</i> 3. Desensitization Exercise: <i>Telephone-a-mate Activity</i>
<p>Week 2: Session 2</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking tool: <i>OPV (Other People’s Views)</i> 3. Desensitization Exercise: <i>Presentation on favorite topic</i>
<p>Week 3: Session 3</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking Tool: <i>FIP (First Important Priorities)</i> 3. Desensitization Exercise: <i>Reading in front of group</i>
<p>Week 4: Session 4</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking Tool: <i>APC (Alternatives, Possibilities, Choices)</i> 3. Desensitization Exercise: <i>Asking a question in front of group</i>
<p>Week 5: Session 5</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking Tool: <i>AGO (Aims, Goals, Objectives)</i> 3. Desensitization Exercise: <i>Presentation on favorite topic</i>
<p>Week 6: Session 6</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking Tool: <i>CAF (Consider All Factors)</i> 3. Desensitization Exercise: <i>Reading in front of group</i>
<p>Week 7: Session 7</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Thinking Tool : <i>C&S (Consequence & Sequel)</i> 3. Desensitization Exercise: <i>Asking a question in front of group</i>
<p>Week 8: Session 8</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Topic: <i>Rules</i> 3. Desensitization Exercise: <i>Presentation on favorite topic</i>
<p>Week 9: Session 9</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Topic: <i>Decisions</i> 3. Desensitization Exercise: <i>Reading in front of group</i>
<p>Week 10: Session 10</p> <ol style="list-style-type: none"> 1. Relaxation Exercise 2. Topic: <i>Planning</i> 3. Desensitization Exercise: <i>Asking a question in front of group</i>

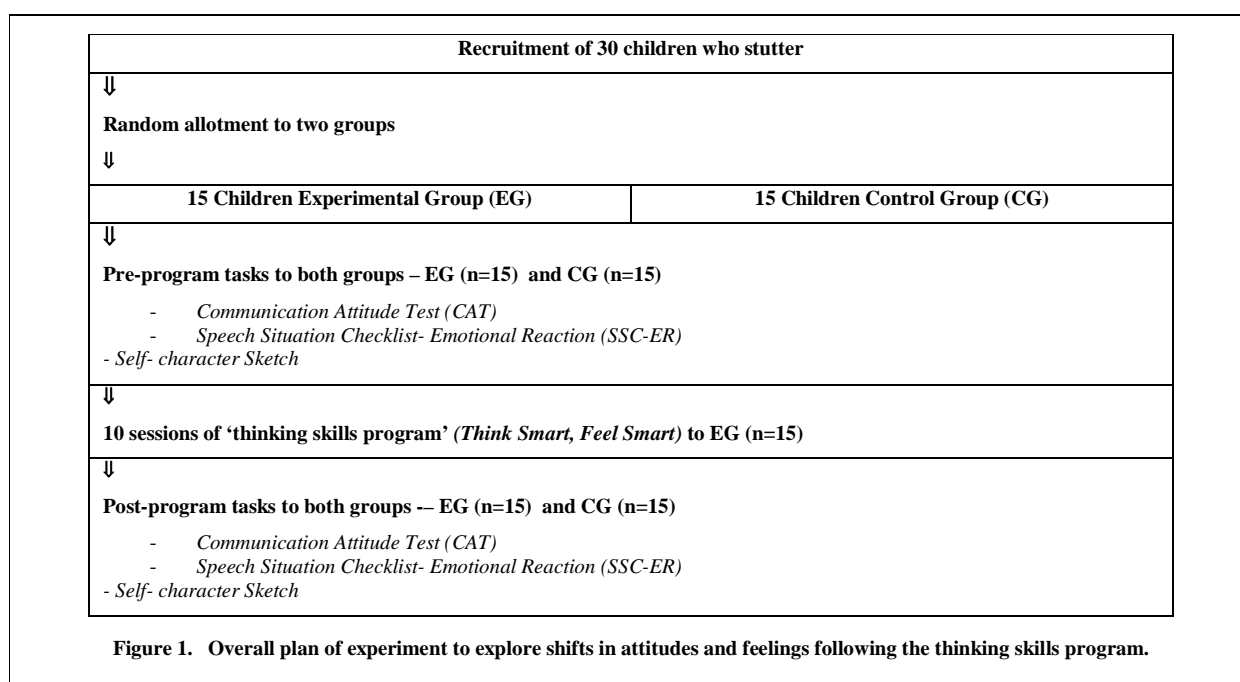
1.4 Evaluating Efficacy of Treatment of Stuttering

There is general agreement that we need more research into therapeutic efficiency in stuttering treatment (Bothe, 2003; Ingham, 2003; Finn, 2003; Bernstein-Ratner, 2005). It has also been recognized that measuring different aspects of stuttering, such as covert stuttering, is very difficult, but does not negate the importance of the behavior (Starkweather, 1987). Evaluating the outcome of stuttering treatment is certainly not a simple task. Shames and Rubin (1986) state that a multitude of variables and interacting factors are involved in deciding whether a particular program of stuttering treatment has been effective. Interestingly, Guntupalli, Kalinowski and Saltuklaroglu (2006) note their surprise at Bloodstein's (1995) review of 162 studies investigating the efficacy of therapeutic interventions for stuttering over the last 70 years. According to this review, almost all studies were effective in significantly reducing speech behaviors such as repetitions and prolongations of speech sounds. Guntupalli et al. (2006) argue that this is "highly improbable considering that many of the treatment methods were diametrically opposed in their principles and implementation procedures" (p. 1). The researchers stress that overt measures alone, while providing some essential information, are incomplete without the "added measure of self-reports" (p.15). Conture and Guitar (1993) discuss the problems and progress in evaluating efficacy of treatment of stuttering in school-age children who stutter. They argue that few studies have broken the mold of just assessing frequency of stuttering in the therapy setting. It is suggested that more studies are needed to assess children's own perceptions of how they speak and how they feel about talking. It is stressed that "true therapy efficacy involves improving the stuttering child's ability to use his speech in daily communicative situations" (p. 253) and such a goal may, and often does, increase the frequency of stuttering moments because children are speaking more. This study explored changes in the feelings and attitudes of school-age children who stutter in a clinical real life situation.

2 Method

2.1 Overview Plan of Project

An overall plan of the research project is shown in Figure 1. Recruitment of participants was followed by random allotment to two groups (experimental group and control group). Both groups were assessed on attitudes and feelings. The experimental group participated in a ten session thinking skills program. Following the program, both groups were assessed again on attitudes and feelings.



2.2 Recruitment of Participants

For the purposes of this research project, the participating school-age children refer to children between the ages of 8 years and 12 years. These children attended primary school (second cycle) or had started first year of secondary in a typical Maltese school. Participants were required to have appropriate receptive and expressive language abilities based on a language assessment by the referring speech-language pathologist. The language assessment consisted of scores on a modified Aston Index (Newton, Thomson & Richards, 1979) and screening of a language sample. The Aston Index is a comprehensive, tried & tested battery of assessments for screening and diagnosing language difficulties. All participants were diagnosed as children who stutter and had been stuttering for at least 12 months prior to their participation in the study. All the thirty-five registered speech-language pathologists employed in the community clinics of the Public Health Service were invited to a meeting to make them aware of the project and explain the procedures. An exercise was held to identify the number of children who stutter meeting the criteria mentioned earlier, within the age range of 8 years to 12 years, in their caseload both in the public service and in the private practice. The total number of possible candidates who could take part in the project was 37 children.

The speech language pathologists were given invitations for the parents of the children to refer their child to participate in the project. The parents of 31 children out of a total of 37, accepted for their child to participate in the project. One of the children could not attend the pre-program assessment as her mother had a serious car accident. The family requested that their child be temporarily removed from the list of participants. The reasons given by the parents who did not participate were: difficulties in traveling to the clinic and other commitments of the child including private lessons in academic subjects or sports activities.

To eliminate other biases between groups, stratification was used to ensure age and gender balance. The 30 children were matched on age and gender. Again, to prevent any biases, the random allocation of the participants, using random number allocation, was done by an independent registered speech language pathologist not involved in the study. The participants were placed in two groups. One group was randomly chosen, using coin toss, to be the experimental group while the other group formed the delayed-program control group. Informed consent was obtained upon admission to study.

The experimental group consisted of 15 children between the ages of 8; 1 years and 11; 11 years. The mean age was 10 years 1 month (SD = 1; 2). Out of 15 children, 13 were males and 2 were females. The control group consisted of 15 children between the ages of 8; 3 years and 11; 11 years. The mean age was 10 years 2 months (SD = 1; 3). Out of 15 children, 12 were males and 3 were females. Subject characteristics with the mean age and the gender ratio for each group are shown in Table 1.

Statistic	EG	CG
Mean Age (years; months)	10;1	10;2
Number of boys	13	12
Number of girls	2	3

Table 1: Subject characteristics: Mean Ages and Gender of Experimental Group and Control Group.

2.3 Design and procedure

A pre/post study design was used to determine variations in the feelings and attitudes of the school-age children who stutter in the experimental group and children in the control group. Two weeks before the ten session thinking skills program, three measures of the children were carried out. The three tasks were the updated Communication Attitude Test (CAT) (Brutten, 2004a), the Speech Situation Checklist Emotional Reaction (Brutten, 2004b) and the self-character sketch (Kelly, 1991). Together with the speech language pathologist currently treating the child, the researcher administered three tasks during a session at the speech language clinic where the child was being seen for speech and language intervention. The same tasks were carried out with the waiting list control group at the

beginning of their waiting period of ten weeks before commencing the program. The same three tasks were repeated to both experimental group and control group in the month following the ten session thinking skills program.

2.4 Data Analysis

Data was analysed by comparing scores made by the experimental group and control group before and after the thinking skills program. The Kolmogorov-Smirnov's Test was used to determine whether the data had a normal distribution. Since all data was found to have a normal distribution ($p > 0.05$), parametric tests were used to compare the mean scores between experimental group and control group and between pre- and post- program. The two-factor analysis of variance (ANOVA) was used to determine if there were significant differences in the pre- and post- mean scores (over a period of three months) of the experimental group and control group in the: a) Communication Attitude Test (CAT) and b) Speech Situation Checklist Emotional Reaction (SSC-ER). Qualitative analysis was also used to analyze the self-characterization sketches before and after the thinking skills program.

3 Results

3.1 Communication Attitude Test

A two way ANOVA demonstrated no significant main effect of group ($F [1,28] = 0.24; p = 0.63$) or time ($F [1,28] = 3.85; p = 0.06$). A significant group x time interaction effect was found ($F [1,28] = 7.76; p = 0.009$). Effect size $d = 0.2$. Post hoc paired t-test analysis demonstrating a significant reduction in scores obtained by the experimental group at the start and end of the program ($t = 3.4, p = .0042$). The pre-program and post-program mean CAT scores and standard deviations of experimental group and control group are found in Table 2. Figure 2 shows a graph of the mean pre- and post- CAT scores for the experimental group and control group.

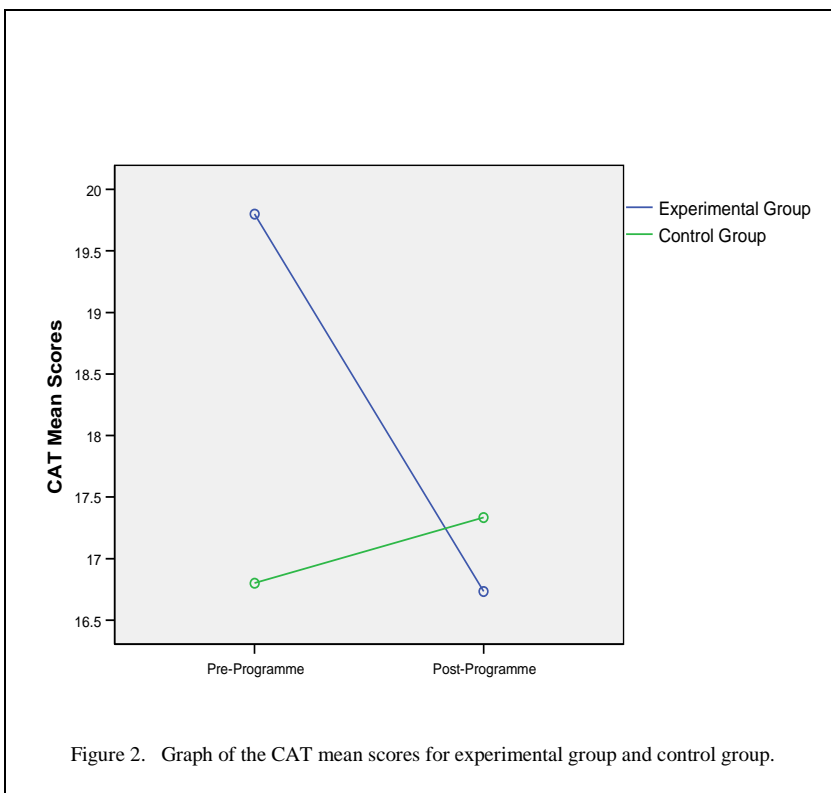


Figure 2. Graph of the CAT mean scores for experimental group and control group.

	Experimental Group		Control Group	
	Pre-	Post-	Pre-	Post-
Mean	19.7	16.7	16.8	17.3
SD	7.1	6.7	6.1	7.8

Table 2. Communication Attitude Test (CAT) Scores: Experimental Group (EG, $n=15$) and Control Group (CG, $n=15$) – pre-program and post-program.

3.2 Speech Situation Checklist –Emotional Reaction

A two way ANOVA demonstrated no significant main effect of group ($F [1,28] = 0; p = 1$) or time ($F [1,28] = 0.35; p = 0.59$). No significant group x time interaction effect was found ($F [1,28] = 0.25; p = 0.62$). The pre- program and post-program mean SSC-ER scores and standard deviations of experimental group and control group are found in Table 3.

N=15	Experimental Group		Control Group	
	Pre-	Post-	Pre-	Post-
Mean	107	107	107	109.9
SD	27.5	29.3	35	37.9

Table 3. Speech Situation Checklist – Emotional Reaction (SSC-ER) Scores:

3.3 Self-character Sketch

Each participant was asked to provide a self-characterization sketch. The task was presented as a request to write roughly a page. The instruction was:

Tell me what sort of boy or girl is. Tell me about yourself as if you were being described by an imaginary friend who knows you and likes you and above all understands you very well. This person would be able to say what your character is and everything about you. Perhaps you could begin with: (your name) is and say something important about yourself. Try and fill this page.

The participants were also given a choice of either writing their own self-characterization or dictating it in order to overcome any inhibitions due to spelling or writing difficulties. They could answer either in the English or Maltese language. In this study, 18 children responded in English, 10 children responded in Maltese, 2 responded in mixed Maltese and English. The number of children who dictated the sketch in Maltese were 3.

The mean of two judges were used on six measures (Jackson & Bannister, 1985: 70) derived from the self-characterization. Intraclass correlation (ICC) was used to measure inter-rater reliability. According to Garson (2006):

$ICC = 0.40$ to 0.59 is considered moderate inter-rater reliability,
 $ICC = 0.60$ to 0.79 substantial, and
 $ICC =$ over 0.80 outstanding.

The single measures reliability for two-way mixed effects model were obtained using the SPSS for Windows 14.0.0 (2005) software for the following six measures:

1. *Views of others' score*: a count of the number of times the child refers to the view taken of him or her by other people (Interjudge agreement pre-program $ICC=0.74$; post-program $ICC=0.91$).
2. *Personal history and future score*: a count of the number of times the child refers to his or her past or possible future in psychological terms (Interjudge agreement pre-program $ICC=0.13$; post-program $ICC=0.49$).
3. *Psychological cause and effect score*: a count of the number of times a child makes an assertion of a cause and effect kind in psychological terms (Interjudge agreement pre-program $ICC=0.54$; post-program $ICC=0.58$).
4. *Psychological statements score*: a count of the number of psychological statements of any kind made by the child (Interjudge agreement pre-program $ICC=0.89$; post-program $ICC=0.94$).

5. *Contradictions score*: a count of the number of pairs of themes or general assertions which were contradictory in some way (Interjudge agreement pre-program $ICC=1$; post-program $ICC=1$).
6. *Insight score*: a count of the number of statements reflecting the child's awareness of his or her shortcomings and resulting problems (Interjudge agreement pre-program $ICC=0.88$; post-program $ICC=0.4$).

Elaboration and increase in the number of statements in self-character sketches was noted in ten (10) out of fifteen (15) participants of the experimental group. A sample of elaboration is shown in Table 4 with an analysis of the pre-program and post-program difference in the self-character sketches of participants (A1) and (A6).

Table 4. Analysis Self-Characterization of Experimental Group (EG) participants A1, A6: pre-program and post-program.

Experimental Group (EG)	
Pre-program	Post-Program
<p>A1</p> <p>Views of others score: 2</p> <p>Personal history and future score: -</p> <p>Psychological cause and effect score: 2</p> <p>Psychological statements score: 1</p> <p>Contradictions score: -</p> <p>Insight score: -</p> <p>Specific comments:</p> <p><i>Views of others: 'very nice', 'very funny'.</i></p> <p><i>Psychological cause and effect: 'I like her cause we are friends and sometimes we play', 'I love Y because she is my best friend'</i></p> <p><i>Psychological statement: 'sometimes she comes to our house'.</i></p>	<p>A1</p> <p>Views of others score: 1.5</p> <p>Personal history and future score: -</p> <p>Psychological cause and effect score: .5</p> <p>Psychological statements score: 5.5</p> <p>Contradictions score: -</p> <p>Insight score: 1</p> <p>Specific comments:</p> <p><i>Views of others: 'her mother loves her a lot'</i></p> <p><i>Psychological cause and effect: 'when I go to her house her mother brings us some appetizers to eat'</i></p> <p><i>Psychological statements: 'very good at school', 'knows how to sing, read and dance and other things', 'thing she likes most is drama', 'likes me a lot', 'likes to play hide and seek and catch'</i></p> <p><i>Insight: 'What I have said today about Y is very interesting'.</i></p>
<p>A6</p> <p>Views of others score: -</p> <p>Personal history and future score: -</p> <p>Psychological cause and effect score: -</p> <p>Psychological statements score: 2</p> <p>Contradictions score: -</p> <p>Insight score: 1</p> <p>Specific comments:</p> <p><i>Psychological statements: 'likes to play with me', 'is always interested in me', 'likes talking to me'.</i></p>	<p>A6</p> <p>Views of others score: 1.5</p> <p>Personal history and future score: 1</p> <p>Psychological cause and effect score: -</p> <p>Psychological statements score: 4</p> <p>Contradictions score: -</p> <p>Insight score: .5</p> <p>Specific comments:</p> <p><i>Views of others: 'I tell him to talk slow', 'always stay with him'</i></p> <p><i>Personal history and future score: 'today is his birthday'</i></p> <p><i>Psychological statements: 'likes me a lot', 'helps me when somebody attacks me', 'do jokes to each other', 'we both believe in Crusader'</i></p> <p><i>Insight: 'I know some secrets, real secrets'.</i></p>

Elaboration and increase in the number of statements in self-character sketches was noted in (six) 6 out of fifteen (15) participants of the control group. A sample of elaboration is shown in Table 5 with an analysis of the pre-program and post-program difference in the self-character sketches of participants (B7) and (B11).

Table 5. Analysis Self-Characterization of Control Group (CG) participants B7, B11: pre-program and post-program.

Control Group (CG)	
Pre-program	Post-Program
<p>B7</p> <p>Views of others score: 1</p> <p>Personal history and future score: .5</p> <p>Psychological cause and effect score: 0</p> <p>Psychological statements score: 1.5</p> <p>Contradictions score: 1</p> <p>Insight score: 1</p> <p>Specific comments:</p> <p><i>Views of others: 'kind person'</i></p> <p><i>Personal history: 'usually gets high marks'</i></p> <p><i>Psychological statements: 'he loves to eat spaghetti'</i></p> <p><i>Contradictions: 'he talks very well sometimes but many times he gets stuck'</i></p> <p><i>Insight: 'many times he gets stuck'.</i></p>	<p>B7</p> <p>Views of others score: 2</p> <p>Personal history and future score: -</p> <p>Psychological cause and effect score: -</p> <p>Psychological statements score: 5.5</p> <p>Contradictions score: -</p> <p>Insight score: -</p> <p>Specific comments:</p> <p><i>Views of others: 'good boy', '10 years old'</i></p> <p><i>Psychological statements: 'learns piano', 'has mum, dad and brother', 'favorite subject at school is music and dram', 'has pet', 'loves him', 'goes to Junior School'.</i></p>
<p>B11</p> <p>Views of others score: 1</p> <p>Personal history and future score: -</p> <p>Psychological cause and effect score: .5</p> <p>Psychological statements score: -</p> <p>Contradictions score: .5</p> <p>Insight score: 2</p> <p>Specific comments:</p> <p><i>Views of others: 'is a good friend'</i></p> <p><i>Contradictions: 'I think she is normal and everyone has something'</i></p> <p><i>Insight: 'she doesn't speak well and I cannot walk well so no one is perfect', 'she doesn't speak well but she makes the class smile'.</i></p>	<p>B11</p> <p>Views of others score: 1</p> <p>Personal history and future score: -</p> <p>Psychological cause and effect score: .5</p> <p>Psychological statements score: 2.5</p> <p>Contradictions score: 2</p> <p>Insight score: 1.5</p> <p>Specific comments:</p> <p><i>Views of others: 'has a beautiful character'</i></p> <p><i>Psychological cause and effect: 'I sometimes try to help her a bit but some laugh'</i></p> <p><i>Psychological statements: 'she likes to play jokes on us'; 'she shares problems with me'</i></p> <p><i>Contradictions: 'one of the problems is that she does not talk well-I sometimes don't even know that she is not talking well'; 'I like (Y) the way she is but I know that with some time more she will be out of this problem'</i></p> <p><i>Insight: 'she doesn't talk well'; 'I don't think about the problem because all I want to know that she has a strong character and because of that no one makes fun of her'.</i></p>

Only three participants (two females and one male) out of the thirty participating in this study mentioned their speech difficulties. The female participants noted that '*she does not like to talk loudly*' (B8 pre-), '*does not speak well but she makes the class smile*' (B11 pre-) and '*one of the problem was that she doesn't talk well*' (B11 post-). The male participant noted that '*he talks a bit good*' (B9 pre-).

4 Discussion

4.1 Communication Attitude Test

A more positive attitude to communication with a significantly lower score on the Communication Attitude Test (CAT) was recorded by the children in the experimental group. However, "the program did not bring the speech-associated attitude of the children who stuttered down to the level of those of the norm who do not stutter" (G. Brutton, personal communication, 16 May 2006). On the other hand, there was no significant difference in the pre- and post- Communication Attitude Test (CAT) scores of the children in the control group. This result infers that the CAT is a reliable tool for this kind of assessment.

In this study, the children following the thinking skills program reduced their scores on the Communication Attitude Test (CAT) indicating broadening perception leading to a more positive attitude to communication. Some thinking tools could have helped the children perceive themselves differently. However, this was not enough to bring the scores down to the level of children who do not stutter. This could be due to a number of reasons. Some of these reasons could include the short time interval of the program (over a period of three months), the actual content which could be improved on, the intensity of the program not being enough, the family supporting with new ideas or concepts being taught at home, and/or maybe it was too late for the child's development.

It would have been interesting to follow up on the children in six months and see if the change in attitude was maintained but further data collection was not possible. This was because, besides the danger of losing subjects as the project was extended, it was also decided to modify the thinking skills program that was presented to the control group. Some children in the experimental group were also invited to join. As a result, data obtained from a follow up would not have been easily compared with those obtained earlier in the project.

A problem facing this kind of research is that it is difficult to measure attitudes and attitude change. There could be a tendency for the student to tell the speech-language pathologist what the speech-language pathologist wants to hear. Tests like the Communication Attitude Test (CAT) can give us indications on the speech-associated attitudes but the effect that stuttering has on people personally is difficult to measure. Further, additional surveys may be considered—such as the Overall Assessment of the Speaker's Experiences of Stuttering (OASES) (Yaruss & Quesal, 2006) or the Assessment of the Child's Experience of Stuttering (ACES) (Yaruss, Coleman & Quesal, 2006). The OASES is a tool used to collect information about how stuttering affects one's life.

4.2 Speech Situation Checklist

No significant interaction effect was recorded in the Speech Situation Checklist Emotional Reaction pre- and post- scores of the children in the experimental group and control group. This result also infers that the Speech Situation Checklist Emotional Reaction is a reliable tool for this kind of assessment. The thinking skills program did not have much effect in reducing fears in the various situations. No significant holistic improvements relative to the fear of social punishment resulting from stuttering was indicated. This could be due to exercises not being targeted individually according to the specific fears the child indicated in the Speech Situation Checklist. Maybe some children would benefit from more frequent sessions or from individual sessions. Others might benefit from a combination of individual and group therapy.

4.3 *Self-character sketch*

Elaboration, with increased self-construing statements, was noted in the post-program self-character sketches of the majority of children who stutter following the thinking skills program. Based on the material derived from the self-characterizations, the changes in their expressive output could be related to the experiences in the group, which had the potential to enhance their abilities to express themselves. However, it is impossible to make this a conclusive statement since elaboration could be due to increased confidence in the setting, making them more relaxed and therefore understand the task better.

Only three children (two females and one male) out of thirty participants mentioned their speech difficulties in the self-character sketch. Any gender relationship cannot be concluded due to the small number of participants. Overall, in writing a statement about their character, the children did not seem as if they wanted to mention their speech difficulty. One reason could be that the children were not in the action stage and not ready to commit to change. It might not have been an important issue in their life. It is interesting that it was mostly the female participants who mentioned their speech difficulties in the self-character sketch. Other reasons could be simply the concept of 'shame' or children not possessing the language skills to accurately express what they are experiencing in life. Although this study did not include a comparison of expressive writing skills with children who do not stutter, overall, it was noted that the general writing skills of the children included in the project included few insight statements.

5. **Summary and Clinical Implications**

This study has shown that the thinking skills program helped children broaden perception leading them to develop a more positive attitude to communication. However, other components are essential in an intervention program. Specific speaking fears in different situations need to be addressed. Stuttering intervention should also focus on decreasing dysfluency but also improve attitudes and feelings. The thinking skills program could improve attitudes towards communication and could also help children elaborate in their writing skills and creativity.

Acknowledgements

I would like to thank my supervisors Professor Jerry Wellington and Dr Shelagh Brumfitt for their expert guidance and their constant encouragement and advice. This research was in partial fulfillment for the degree of Doctor of Education - University of Sheffield, UK.

References

- Bajina, K. (1995). Covert aspects associated with the 'stuttering syndrome': Focus on self-esteem. In: M. Fawcus (Ed.) *Stuttering from theory to practice*. London, England: Whurr Publishers Ltd.
- Bernstein Ratner, N. (2005). Evidence-based practice in stuttering: Some questions to consider. *Journal of Fluency Disorders*, 30, 3, 163-188.
- Bloodstein, O. (1995). *A Handbook on Stuttering*. Singular Publishing Group, Inc.
- Bothe, A.K. (2003). Evidence-based treatment of stuttering: V. The art of clinical practice and the future of clinical research. *Journal of Fluency Disorders*, 28, 3, 247-258.
- Brutten, G.J. (2004a). *Communication Attitude Test*. Behavior Assessment Battery (BAB) Associates, Orlando: University of Central Florida.
- Brutten, G.J. (2004b). *Speech Situation Checklist- Emotional Reaction for Children*. Behavior Assessment Battery (BAB) Associates, Orlando: University of Central Florida.
-

-
- Brutten, G.J. (gbrutten@mail.ucf.edu) (2006). Email to: Joseph Agius (josephagius@waldonet.net.mt) 16 May 2006.
- Chmela, K.A., & Reardon, N. (2001). *The School-Age Child who Stutters: Working effectively with Attitudes and Emotions ... A Workbook*. Stuttering Foundation of America.
- Conture, E.G. (1990). *Stuttering*. 2nd edition. Englewood Cliffs, NJ: Prentice-Hall.
- Conture, E.G., & Guitar, B.E. (1993). Evaluating Efficacy of Treatment of Stuttering: School-Age Children. *Journal of Fluency Disorders*, 18, 253- 287.
- Cooper, E.B., & Cooper, C.S. (1985). Clinician attitudes toward stuttering: a decade of change (1973-1983). *Journal of Fluency Disorders*, 10, 19-33.
- de Bono, E. (1986). *The CoRT Thinking Program*. Advanced Practical Thinking Training, Inc., USA.
- de Bono, E. (1994). *The Teaching of Thinking*. In: S. Dingli (Ed.) *Creative Thinking: A multifaceted Approach*. Malta University Press.
- de Bono, E. (2005). *Making Globalization Work*. Presentation during The Commonwealth Business Forum. 23 November 2005, Hilton, Malta.
- De Nil, L.F., & Brutten, G.J. (1991). Speech-associated attitudes of stuttering and nonstuttering children. *Journal of Speech and Hearing Research*, 34, 60-66.
- Finn, P. (2003). Evidence-based treatment of stuttering. II. Clinical significance of behavioral stuttering treatments. *Journal of Fluency Disorders*, 28, 3, 209-218.
- Garson, D. (2006). *Reliability Analysis. PA 765 Quantitative Research in Public Administration*. [online]. Available from: <URL:<http://www2.chass.ncsu.edu/garson/pa765/reliab.htm>> [Retrieved 3 June 2006]
- Goodley, D. (2000). *Self-advocacy in the Lives of People with Learning Difficulties: The Politics of Resilience*. Buckingham: Open University Press.
- Gregory, H. (1995). *Stuttering therapy: A workshop for specialists*. Unpublished manuscript, Northwestern University and the Stuttering Foundation of America, Evanston, Ill.
- Guntupalli, V., Kalinowski, J., & Saltuklaroglu, T. (2006). The need for self-report data in the assessment of stuttering therapy efficacy: repetitions and prolongations of speech. The stuttering syndrome. *International Journal of Language and Communication Disorders*, 41, 1, 1-18.
- Ingham, J.C. (2003). Evidence-based treatment of stuttering: I. Definition and application. *Journal of Fluency Disorders*, 28, 3, 197-207.
- Jackson, S., & Bannister, D. (1985). *Growing into Self*. In: Bannister (Ed.) *Issues and Approaches in Personal Construct Theory*. Academic Press.
- Kelly, G.A. (1991). *The psychology of personal constructs (2 vols.)*. [First published in 1955]. London: Routledge.
- Lieftink, A., Lechner-van de Noort, M., & Stournaras, F. (1995). Evaluation of a cognitive training program for stuttering children. In: C.W. Peters (Ed.) *stuttering: proceedings of the first world congress on fluency disorders: Munich, Germany, August 8-11 (p. 264- 267)*. The Netherlands: University Press Nijmegen.
- Luper, H., & Muldur, R.L. (1964). *Stuttering: therapy for children*. Eagle-wood Cliffs, NJ: Prentice-Hall, Inc.
- Marshall-Warren, D. (2004). *A Practical Manual of Whole-Being Hypnotherapy*. Deborah Marshall-Warren, 14/15 Biccieni Alley, Zabbar ZBR03, Malta.
-

- Murphy, W. P., Yaruss, J. S., & Quesal, R. W. (2007). Enhancing treatment for school-age children who stutter I. Reducing negative reactions through desensitization and cognitive restructuring. *Journal of Fluency Disorders*, 32, 2, 121-138.
- Newton, M.J., Thomson, M.E., & Richards, I.L. (1979). *Readings in Dyslexia*. Learning Developmental Aids, UK.
- Ramig, P.R., & Dodge, D.M. (2005). *The Child and Adolescent Stuttering. Treatment and Activity Resource Guide*. Thomson Delmar Learning.
- Reitzes, P. (2006). *50 Great Activities for Children who Stutter*. Pro-ed.
- Shames, H., & Rubin, R. (1986). *Stuttering then and now*. Columbus, OH: Merrill Publishing Co.
- SPSS for Windows (2005). Release 14.0.0. Chicago: SPSS Inc.
- Starkweather, W. (1987). *Fluency and Stuttering*. Englewood Cliffs: NJ: Prentice Hall.
- Starkweather, W., Ridener-Gottwald, S., & Halfond, M.M. (1990). *Stuttering prevention: A clinical method*. Englewood Cliffs, NJ: Prentice-Hall.
- Van Eupen, A., & Nagel, R. (1995). 'Think Wise!!' a new cognitive behavior therapy program for stuttering children. In: C.W. Peters (Ed.) *Stuttering: proceedings of the first world congress on fluency disorders: Munich, Germany, August 8-11* (p. 275- 279). The Netherlands: University Press Nijmegen.
- Van Eupen, A., & Nagel-Groen, R. (1996). *Denk-Wijzer, Een cognitief therapieprogramma voor stotterende kinderen van 6 tot en met 12 jaar*. Information leaflet, Swets Publishers.
- Vanryckeghem, M., & Brutten, G.J. (2001). IFA news- 2. Research news. *Journal of Fluency Disorders*, 26, 349-352.
- Yaruss, J.S. (1998). Real-time analysis of speech fluency: Procedures and reliability training. *American Journal of Speech-Language Pathology*, 7, 25-37.
- Yaruss, J.S., Coleman, C.E., & Quesal, R.W. (2006). Assessment of the Child's Experience of Stuttering (ACES). [online]. Available from: <URL:<http://www.stutteringcenter.org/PDF/ACES%20Draft%209-27-06.pdf>> [Retrieved 23 February 2008]
- Yaruss, J. S., & Quesal, R.W. (2006). Overall Assessment of the Speaker's Experience of Stuttering (OASES): Documenting Multiple Outcomes in Stuttering Treatment. *Journal of Fluency Disorders*, 31, 90-115.

About the Author

Dr. Joseph Agius, EdD is a Speech Language Pathologist from Malta with special interest in fluency disorders. He received his Master of Science degree in Clinical Speech and Language Studies from Trinity College, Dublin and Doctor of Education degree from the University of Sheffield. Dr. Agius lectures on 'Fluency Disorders' and 'Language and Psychiatry' at the University of Malta and is Principal Speech Language Pathologist with the Health Division, Malta. He is also nominated as partner expert, representing the University of Malta, to collaborate with eight European Universities to develop a state of the art specialization module in the field of fluency and fluency disorders.

Appendix A:**'THINK SMART, FEEL SMART' PROGRAM***(Sample Session)***Session 1****Duration: 90 minutes****Component 1: Relaxation (15 minutes)**

Relaxation exercise based on the work of Edmund Jacobson (Gregory, 1995).

Guided Fantasies: The Sea Urchin (Marshall-Warren, 2004).

Aims: 1. To help student increase awareness of gradations of tension in the larger grosser muscles of the body.

2. To help student monitor muscular tension through the process of voluntary increasing tension in various muscle groups of the body and then letting the tension go.

Objective:

1. Be aware of body and mind tension during speaking situations and strive for reduced tension.
2. Be relaxed and calm during the 'thinking' component of the session.

Component 2: Thinking Skill Tool (De Bono, 1986) (45 minutes)

(Adapted from 'lesson material', official website of Thinking Skills Middle Years, designed and maintained by T. Mercieca and S. Pulis, (2005) link available on the site: <http://schoolnet.gov.mt/middle>)

Tool One: P.M.I. 

Aims: To help students to focus when evaluating a situation or statement.

Objective/Goal: By the end of the session the students should:

1. Feel more confident in the way that they make their decisions,
2. Know how to think objectively taking into consideration the three components of the tool: Plus Minus and Interesting,
3. Identify areas where they could practice the tool,
4. Get accustomed to the time factor when using the P.M.I.

'THINK SMART, FEEL SMART' PROGRAM

Session One

Continued

Warmer: How do you feel today? (3 minutes)

Students will say how they feel using a scale from 1-10. 1 is the lowest/saddest that one can be, 10 is the best that one can feel.

Activity A1:

1. Story/anecdote (5 minutes)

Paul celebrated his birthday last weekend. His grandmother could not go out so she gave him money to buy a present. Paul was very happy about this because he could buy whatever he wanted. So he went to the confectioner close to his house and spent all the money on sweets. He was so happy with himself that he was showing everyone what he had bought. Within an hour Paul had eaten all the sweets.

Some time after this happened Paul was in his room playing with the toys he had received on his birthday. He displayed all the toys in a row and tried to remember who gave him each toy. Soon enough he realized that he did not have a toy from his grandmother and he started feeling sorry about the foolish way in which he had spent all the money.

Paul had not thought long enough before he made the decision and now he will just feel sorry about it because he cannot turn back time.

Had he done the P.M.I. he would have been in a position to think about all the points involved in this decision before acting?

Clinician should elicit responses from the students and write them on a whiteboard or flipchart paper.

2. Clinician explains what thinking skills are and that the students will be learning a method designed by Dr. Edward de Bono. (5 minutes)

Rationale: Starting this component with a story will help the students realize how important it is to think before we act. They will be much more likely to generate responses throughout the lesson because they can associate the use of the tool with the story.

'THINK SMART, FEEL SMART' PROGRAM

Session One

Continued

Tool Explanation:

1. What is P.M.I.?

P.M.I. stands for Plus Minus Interesting.

P - Plus, what I like about an idea



I like this idea because.....

M - Minus, what I don't like about an idea



I do not like this idea because.....

I - Interesting points about an idea. These are neither positive nor negative. The students here have the opportunity to invent and be creative. They can come up with solutions to points that were mentioned under the Minus.

It would be interesting to see if/how/when.....



2. When do we use it?

The P.M.I. is used when we need to evaluate something or when we have to make a decision.

How do you do a P.M.I.?

To do a P.M.I. you can divide the board or page into three. One column is for the Plus Points, one for the Minus Points and one for the Interesting Points.

PLUS	MINUS	INTERESTING
		It would be interesting....

'THINK SMART, FEEL SMART' PROGRAM

Session One

Continued

Activity A2: (10 minutes)

Practice Item 1.

a) Imagine you had wheels on your feet.

Plenary feedback on **Plus** points, **Minus** points and **Interesting** points.

b) If classrooms had no roof.

Plenary feedback on **Plus** points, **Minus** points and **Interesting** points.

c) Imagine the cinema was free of charge for all children under 12 years.

Students work in groups of three. One person in each group is to write.

1. Students are given 5 minutes to generate as many **Plus** points as possible.
2. After 5 minutes, the students are asked to stop writing.
3. Students are given another set of 5 minutes to generate as many **Minus** points as possible this time.
4. After 5 minutes. Time up. Students are asked to stop writing.
5. Students are given another set of 5 minutes to generate as many **Interesting** points as possible this time. As this a relatively abstract concept, the clinician could generate one or two responses before the students start generating their own.

N.B. As this is the first time for the students, the clinician could do this as a group activity on the board. It will be much easier for the students to grasp the concept. They will then be able to do it on their own.

Processing:

Clinician asks the students the following questions to stimulate metacognitive talk.

1. How did you feel when doing the P.M.I.?
2. Do you think that separating the P, M, & I helped you? How?
3. What can you notice? (that maybe the idea is not as great as we thought at the beginning because we were only seeing the **Plus** points then).

Activity A3:

Practice item 2. Imagine that we decide not to speak any longer. (5 minutes)

Processing: Students now share the outcome of their thoughts.

'THINK SMART, FEEL SMART' PROGRAM**Session One****Continued****Activity A4:**

Transfer.

Making sure that the children will be able to use the tool in a variety of situations is of paramount importance. The following video is shown and children think of the different situations.

Video: *'Stuttering: For Kids, By Kids'* (Stuttering Foundation of America, 2005). (12 minutes)

Many children who stutter have never met anyone else who struggles with the same disability. In this video from The Stuttering Foundation, they hear other kids who recount how they handle challenges such as teasing, speaking out in class, and teaching others about stuttering.

Activity A5: (5 minutes)

Recap tool one.

Clinician summarizes tool one.

BREAK (15 minutes)**Component 3: Desensitization (30 minutes)**

Aims: To help children desensitize in specific speaking situations. By having fun using this skill, the children will associate this activity with a more positive attitude.

Objective/Goal: By the end of the session the children should:

1. Enjoy using the telephone.
2. Have more positive feelings on using the telephone.

Activity 1: Phone-a-mate exercise (25 minutes)

Children are divided in five groups with three children in each group. Each group spends five minutes on the phone with another group in another room. Each child would have an opportunity to describe on the phone a picture from Winslow Press ColorCards® series- Emotions (Harrison 1997) to the other child. The other child tries to guess what the object is.

'THINK SMART, FEEL SMART' PROGRAM

Session One

Continued

Activity 2: Preparing for the following week (5 minutes)

At the end of the session five children will be chosen alphabetically to prepare a five minute presentation on a favorite topic for the following session.

Materials needed:

Loose sheets of paper

Flipchart paper and markers

Symbol of the tool

Video: *Stuttering For Kids, By Kids*

ColorCards® Series - Emotions- Winslow Press Ltd. UK.

Two telephone sets

Stopwatch

References

De Bono, E., (1986). *The CoRT Thinking Program*. Advanced Practical Thinking Training, Inc., USA.

Gregory, H. (1995). *Stuttering therapy: A workshop for specialists*. Unpublished manuscript, Northwestern University and the Stuttering Foundation of America, Evanston, Ill.

Harrison, V. (1996). *ColorCards ® series- Emotions*. Winslow Press Ltd., UK. www.winslow-press.co.uk.

Marshall-Warren, D. (2004). *A Practical Manual of Whole-Being Hypnotherapy*. Deborah Marshall-Warren, 14/15 Biccieni Alley, Zabbar ZBR03, Malta.

Mercieca, T., Pulis, S. (2005). Lesson Material. *Official Website of Thinking Skills Middle Years*, link available on the site: <http://schoolnet.gov.mt/middle>.

Stuttering Foundation of America (2005). Video: *Stuttering: For Kids, By Kids*. Stuttering Foundation of America.
