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**Effectiveness of the Classroom Communication
Resource in changing primary school learners' attitudes
towards children who stutter after one month: A
Feasibility study**

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ABSTRACT

Children who stutter are bullied and teased by their peers, especially in the primary schooling years. The Classroom Communication resource (CCR) was developed as a teacher-administered classroom-based education programme aiming to improve peers' attitudes towards CWS. The focus of this feasibility study was to determine the initial treatment effect of the CCR to improve peers' attitudes towards CWS and the feasibility for a larger scale cluster randomised trial (CRT) in future. Peer attitudes were determined via a Likert scale questionnaire, the Stuttering Resource Outcomes Measure (SROM), completed by primary school learners. Aim one was to establish if the SROM was a valid and reliable outcomes measure. Aim two utilized a quantitative, CRT design with a control group to describe the direction and magnitude of changes in 196 Grade 7 peers' attitudes towards CWS following the administration of the CCR. It also determined whether the changes were linked to gender or having exposure to a person who stutters. The evidence confirmed that the SROM was a valid and reliable outcomes measure. Attitude changes after the administration of the CCR were analysed through inferential statistics. A significant positive change in SROM scores was found in the experimental group ($p=0.005$) when compared to the control group ($p=0.41$). Females had a greater magnitude of change in SROM scores after the administration of the CCR compared to males. Participants with prior exposure to a person who stutters held more positive attitudes towards CWS at pre-test. The magnitude of positive change in SROM was greater in participants who did not have prior exposure to a person who stutters ($p=0.007$). The study indicated initial positive treatment effect of the CCR and implications for the feasibility of a larger CRT is discussed.

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GLOSSARY

Definition of key terms

Bullying: Bullying is an intentional, aggressive act that takes place on a regular basis and is characterized by a power imbalance between the bully and the victim (Shore, 2009)

Feasibility study: Feasibility studies for Phase III trials are studies used to determine initial evidence of the efficacy of an intervention to determine the success of future full scale studies (Thabane et al., 2010).

Stuttering: Stuttering can be defined as an atypical duration or amount of stoppages in the flow of speech (Guitar, 2013).

Abbreviations used in the study

CCR: Classroom Communication Resource

CRT: Cluster Randomised Trial

CWS: Child who Stutters/Children who stutter

EBP: Evidence Based Practice

ICF: International Classification of Functioning, Disability and Health

IQR: Interquartile range

PATCS: Peer Attitude towards Children who stutter scale

PSD: Positive Social Distance subscale

RCT: Randomized Control Trial

SLT: Speech-Language Therapist

SP: Social Pressure subscale

SROM: Stuttering Resource Outcomes Measure

VI: Verbal Interaction subscale

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CHAPTER ONE: INTRODUCTION TO STUDY

1.1 Overview of the Chapter

Chapter One provides the study rationale, an overview of the study and context for the study. An overview of the chapters is provided to orientate the reader to the purpose of each chapter and the contribution they provide to the study.

1.2. Rationale and overview of study

Speech-Language Therapists (SLTs) should aim to manage their clients holistically by also addressing the challenges clients experience in daily activities and not only in the consultation room. The International Classification of Functioning, Disability and Health (ICF) supports this notion. The ICF was approved by the 54th World Health Assembly as a model to classify functioning, disability and health (Stucki, Konstanjsek, Ustun & Cieza, 2008). The ICF helps to create a better understanding of human functioning and how disability impacts this functioning. Models, like the ICF, inform the development of comprehensive interventions to enhance functioning of individuals as well as populations (Stucki et al., 2008). Applied to stuttering, this assists in describing how the condition (stuttering) is experienced by the individual in their daily activities and participation (Yaruss & Quesal, 2004). Because experiences of stuttering are shaped by everyday contexts, it is important to understand what factors restrict and facilitate participation of persons who stutter. Adults and children who stutter (CWS) may experience limitations within a number of life areas that can range from interpersonal relationships to major life areas like education and work (Yaruss & Quesal, 2004). Therefore, SLTs should consider how stuttering impacts their client and design interventions to reduce the limitations and increase participation in life activities. The negative attitudes of people in their daily environments, and possible teasing and bullying, can impact the lives of persons who stutter and should be addressed in combination with stuttering.

Teasing and bullying are more likely to affect CWS than their non-stuttering peers (Davis, Howell, & Cooke, 2002). The associated bullying and teasing can affect the well-being of the CWS. It can also impact on the child's scholastic performance by causing academic difficulties, e.g. decreased concentration and learning (Sharp & Smith, 1994 in Blood, Boyle, Blood & Nalesnik, 2010). American and Canadian studies have reported that when CWS are continually bullied the outcomes are long lasting, resulting in low self-esteem and negative emotional states (Blood & Blood, 2004, van Kuik Fast & Langevin, 2010). Eventually bullying can lead to anxiety and depression (van Kuik Fast & Langevin, 2010).

The negative attitudes of peers, and associated teasing and bullying, are a global problem in schooling contexts and are not limited to stuttering. Nansel et al. (2001) found that 160 000 learners in the US stay away from school every day due to fear of being bullied; most teasing and bullying occurs on the playground and in the classrooms (Langevin, Bortnick, Hammer & Wiebe, 1998). The serious consequences of bullying strengthen the case for interventions which promote healthy peer relationships and violence-free schools (Craig, Bell & Leschied, 2011). Children spend a significant portion of their day in the school environment and this seems to be where teasing and bullying is most evident, so it makes sense to focus on an intervention strategy within the school setting.

Most anti-bullying, intervention programmes follow a group approach in schools rather than individual treatment. This is more efficient and cost-effective in bringing about change in schools (Bell, Raczynski & Horne, 2010). All of these programmes are either teacher-driven or have a component which is administered by the teacher. Active teacher participation is central to the success of these programmes since they are the ones implementing it (Craig et al., 2011; Shore, 2009). Teachers have indicated that they are willing to be involved in bully-prevention intervention but that they feel underprepared and lacking in skills (Craig et al., 2011).

Teachers in the Western Cape (South Africa) indicated that teasing and bullying of CWS was a frequent challenge (Filies, Hartley, Kaplan & Pettit, 2009), and many teachers did not believe that they played a role in helping a CWS (Abrahams, 2015). This belief may be a consequence of feeling they have inadequate knowledge and skills needed to assist CWS (Abrahams, 2015). Teachers form an integral part of the interdisciplinary team and it is vital that they understand the value of their role in managing the CWS (Abrahams, 2015). Speech-Language Therapists can partner with teachers and act as advocates for CWS within the school setting to manage teasing and bullying.

Classroom resources are often developed by SLTs for teachers to raise awareness about stuttering and improve negative peer attitudes. There have been repeated calls over time for educational programmes for learners about stuttering (Blood & Blood, 2004; Langevin et al., 1998). Classroom intervention was found to be an effective way to improve peer attitudes towards CWS (Langevin & Prasad, 2012). Classroom-based interventions are specifically relevant in an under-resourced context like South Africa where there is a limited number of SLTs; they should include teachers as partners to improve peer attitudes towards CWS (Kathard et al., 2014). A classroom intervention, the Classroom Communication Resource (CCR) (see Appendix A), was developed by SLTs in South Africa to improve peer attitudes towards CWS and potentially reduce teasing and bullying.

The CCR is unique from other international programmes, such as the *Teasing and Bullying: Unacceptable Behavior (TAB)* programme (Langevin, 2000), in that it is implemented as a single-class lesson opposed to more intensive programmes that span a few weeks. A single-dose intervention was selected due to the large number of learners in South African classrooms and the teachers' workloads. The resource was designed specifically for Grade 7s, since literature would indicate that this is the age range in which teasing and bullying is at its peak (Evans et al., 2008). The classroom intervention, the CCR, consists of a social story, role-play and class discussion. The focus is on a celebration of diversity, and acceptance of differences, while raising awareness about stuttering.

Newly developed interventions can, however, not be applied without first ascertaining their effectiveness. Evidence Based Practice (EBP) recommends that clinicians evaluate clinical interventions before implementing them (Dodd, 2007). In this way EBP has the potential to enhance the treatment provided to clients with communication disorders (Dodd, 2007). In this study the aim was to explore the potential treatment benefit of the CCR by measuring changes in peer attitudes towards CWS. When testing the effectiveness of any intervention the research design must be considered carefully.

Ideally, a Randomised Control Trial (RCT) would be necessary to draw conclusions on the effectiveness of interventions. It is commonly accepted that a RCT is the gold standard in determining the effectiveness of interventions (Moher, Jones & Lepage, 2001). This type of design is however expensive and time-consuming, therefore, it is imperative that a feasibility study is conducted before a full-scale RCT is done. (Thabane et al., 2010). The current study was therefore a feasibility study to determine if there was potential treatment benefit from the CCR, as well as to identify any methodological issues before a large-scale study was attempted. In feasibility studies, lessons can be learnt before a time-consuming and expensive full-scale RCT is undertaken with the risk of invalid results. Due to the nature of this study a Cluster Randomised Trial (CRT) design was used as opposed to a RCT as is described in more detail in the methodology.

The study was divided into two main aims. Aim One focussed on providing evidence of validity and reliability of an outcomes measure, the Stuttering Resource Outcomes Measure (SROM) (see Appendix B), used to determine peer attitudes toward CWS. There was no valid and reliable outcomes measure for measuring attitude-change available for the South African context. A twenty-item Likert scale, the SROM, was developed and thus the researcher first had to determine if there was evidence of its validity and reliability before it could be used.

The second aim of the study was to determine if peer attitudes towards CWS changed after the administration of the CCR. After the development of a valid and reliable outcomes measure, Aim Two was addressed by determining the attitude changes, if any, in peer attitudes towards children who stutter. The focus was on the direction and magnitude of the attitude changes one month after intervention, since this would indicate the initial treatment effect of the CCR, if present. The study only considered a one-month period after intervention but it is acknowledged that some changes might take longer to appear. The study examined attitude changes in relation to gender and exposure to someone who stutters. Literature has indicated that attitudes towards CWS might differ between males and females, although there is disagreement between studies (Dietrich, Jensen & Williams, 2001; Langevin, 2009; Wiesel & Spektor, 1998). Having exposure to someone who stutters might lead to a more positive attitude towards CWS when compared to persons who had no exposure (Langevin, 2009; Langevin et al., 2009). These factors were included since they influence attitudes towards CWS and potentially how participants will react to intervention.

The purpose of this study was to inform SLTs and teachers on the attitudes peers hold towards CWS and explore possible ways of managing negative attitudes that can lead to teasing and bullying. In addition, as a feasibility study it also aims to inform the need for a full-scale CRT and identify factors to consider in designing a CRT. The outcomes measure (SROM) and intervention (CCR) is the first of its kind in South Africa and this study was seen as exploratory to provide evidence on which future research can be built.

1.3 Study Context

This study was conducted in urban schools in Cape Town, specifically in the Cape Metropole. This city is in the Western Cape Province of South Africa, one of nine provinces. In South Africa, schools are classified according to a National Poverty Distribution table. This table describes the distribution of poverty across the country: poverty is unequally spread across South Africa and schools are assigned a quintile based on province-specific poverty data (Department of Education, 2008). Quintiles range from 1 to 5 with 1 indicating the poorest and 5 the least poor. The Western Cape Province is the most resourced province in the country with the least number of learners in quintile one (4%) and the most learners in higher quintiles four (29%) and five (40%) (Department of Education, 2008). Previous studies have assessed the use of the CCR in lower quintile (Quintile 1 and 2) schools (Kathard et al., 2014). This study focussed on the higher quintiles (Quintile 4 and 5) to determine what the outcomes would be in this population. Higher quintile schools are characterized by more material and human resources and are mostly based in urban areas. Most of the learners and teachers would have high English-proficiency levels and learners tend to perform better

academically. By considering the complete range of quintiles, a more appropriate intervention can be developed for the entire population.

The legacy of Apartheid is still evident in a great economic divide. Although the past twenty years have led to significant economic growth and an increase in the Black African middleclass, a large portion of the population still lives in poverty and quality of life does not resemble what the majority was anticipating post-apartheid (Mayosi & Benatar, 2014). According to Statistics South Africa (2014), 45.5% of the population is poor and 20.2% lives in extreme poverty, which is defined as living below the food poverty line. Poverty in South Africa affects all sectors, including the education domain where this study was positioned. There is a shortage of SLTs in South Africa, unequally distributed services (Kathard & Pillay, 2013) as well as a lack of resources. This economic divide and lack of resources was taken into account while designing a contextually appropriate resource, the CCR, to address peer attitudes towards children who stutter. SLTs in South Africa have the responsibility to design contextually relevant intervention resources and should not look to other countries (Pascoe & Norman, 2011).

SLTs can play a vital role in facilitating the empowerment and training of teachers on how to manage learners with disabilities within their classes. Effective inter-disciplinary team work can lead to cost-effective interventions of high quality (MacDonald, Bally, Ferguson, 2010). In South Africa there are, however, no government-employed SLTs based at mainstream schools, only at district level and at special-needs schools. The SLTs at district level facilitate learning but do not render direct speech-language therapy services (Kathard et al., 2011). Children in need of Speech Therapy services have to access the Department of Health in the Public sector or a SLT in the Private Health Care sector. There are, however, barriers to accessing these services, including parents who are working, cost of transport and therapy, and long waiting lists at government institutions. Even if these services are accessed the focus is on individual, office-based therapy, and the teasing and bullying aspect of stuttering is often not addressed.

SLTs need to be creative and innovative in the ways they manage cases with limited resources. One of the ways is to consider different service-delivery models and to develop population-based interventions (Kathard & Pillay, 2013). The CCR is an example of a population-based resource to be used in a low-resourced setting. Teachers are valuable assets in help manage children with speech difficulties, especially those who stutter. SLTs might not be available on-site to support teachers but can provide them with training and resources to address relevant issues, for example, teasing and bullying of children with speech difficulties. This led to the development of the CCR which can be implemented by a teacher without the supervision of a SLT.

1.4 Overview of Chapters

This thesis consists of five chapters. Chapter One provided an overview of the study and orientated the reader as to what the aims and objectives were. The rationale for the study, as well as the context in which it was conducted, was included in this chapter to provide the reader with more insight to the study.

Chapter Two focuses on the theoretical frame and the concepts that underpin the study, e.g. that it was set up as a feasibility study for a possible larger CRT in future. A literature review was included to position this study within this field of research and provide background on the importance and relevance of the study. This chapter critiques literature and provides background for both the aims to afford a comprehensive foundation before the reader is introduced to the details of this specific study.

The methodology for both aims is described in Chapter Three. Details of the research design and procedure and data analysis followed is included. Chapters Four and Five are dedicated to the results and discussion of the findings. In Chapter Four the results and discussion for Aim One are presented while the results and discussion for Aim Two are presented in Chapter Five.

The thesis concludes with a summary of findings and the acknowledgment of strengths and weaknesses of the study. The implications for future research and clinical practice are also discussed.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of Chapter

Chapter Two describes the theory and literature that provide a foundation for this study.

2.2. Literature review

SLTs need to develop an intervention that manages a client holistically and not just the communication disorder; stuttering in this case. SLTs need to be responsive to also treat the teasing and bullying associated with stuttering. When designing new interventions SLTs need to consider the effectiveness of these interventions: RCTs are often used to determine the effectiveness of interventions (Moher et al., 2001). The study was set up as a feasibility study to determine the preliminary treatment effect of the CCR as a resource to improve peer attitudes towards CWS. Feasibility studies are an important step before conducting a full-scale RCT (Thabane et al., 2010): they can provide valuable information on the intervention as well as the data-collection tools to improve the chances of a successful RCT in future (Thabane et al., 2010). The literature review that follows discusses relevant literature that underpins this feasibility study and positions it in this area of research.

- Stuttering, negative attitudes, associated bullying, and impact on child

Peers often exhibit negative attitudes towards other CWS during primary school years (Langevin & Hagler, 2004). These negative attitudes can lead to teasing and bullying. Various studies have been conducted on bullying in general but less specifically linked to stuttering. It is still valuable to consider general bullying literature since CWS form part of the group of children who are more susceptible to being bullied, since stuttering is also an external difference that can lead to bullying (Langevin et al., 1998). A discussion of teasing and bullying literature in general will follow and subsequently a closer focus on teasing and bullying linked to stuttering.

An American bully survey by the World Health Organization (Nansel et al., 2001) indicated that 47% of boys and 36% of girls have been victims of bullying. An Australian study indicated that one in eight learners between the ages of 12 and 14 years are bullied one or more times a week (Skrzypiec, Slee, Murray-Havey & Pereira, 2011). In South Africa 36.6% of Grade 8 learners were involved in bullying behaviour (Laing, Fliser & Lombard, 2007); 8.2% as bullies, 19.3% as victims and 8.7% as bully-victims (who are both bullied and bully others). These statistics indicate that bullying is a global problem that affects school aged children, especially adolescents, from various backgrounds and across gender.

Bullying can take on various forms, from verbal to physical bullying. In an Australian study 72.5% learners reported that they were being called names (Skrzypiec et al., 2011). Orphinas et al. (2000) found that 60% of children were called names, 55% made fun of, 44% pushed, 39% hit or kicked, and 36% were threatened with violence. CWS specifically reported that bullies imitated their stuttering to make fun of them (Langevin et al., 1998).

In South Africa, Grade 5 and 6 learners reported being bullied more than Grade 4 learners (Greeff & Grobler, 2008). South Africa is a diverse country but ethnicity was not found to influence bullying (Greeff & Grobler, 2008). Males (87.7%) and females (71%) reported that they were being bullied and this signals to teachers that current bully interventions might not be as effective as perceived, indicating that more research is needed on the topic of bullying in South Africa (Greeff & Grobler, 2008). This local study supports international research that indicates there is a high incidence of bullying in schools, especially around adolescent years.

Specific links can be made between bullying and teasing and CWS. Adolescents who stutter are at greater risk of being bullied than their non-stuttering peers (Blood & Blood, 2004; Langevin et al., 1998). Bullies oppress CWS more (44.4%) than children who do not stutter (9.2%) (Blood et al., 2011). They are also often more subject to rejection than their non-stuttering peers and less likely to be popular (Davis et al., 2002).

During adolescence, especially grade 7 and 8, children are more susceptible to peer-pressure and possible rejection if their individual differences do not meet the peer norm (Urberg, Shyu & Liang, 1990). Peer pressure is evident in how children view each other. Non-stuttering children (8 to 13 years) have indicated that their feelings and behaviour towards CWS will be influenced by the behaviour of their non-stuttering peers (Langevin & Hagler, 2004). Peers with negative attitudes towards CWS can negatively influence their peers but the same argument can be made for peers with positive attitudes towards CWS. This supports the use of classroom based intervention since it suggests that learners with positive attitudes towards CWS might influence their peers too.

Langevin (2009) found that 20% of school children hold negative attitudes towards children who stutter. Hartford and Leahy (2007) investigated the perceptions of children towards a fluent adult and an adult who stutters. Although all children (aged 6–13 years) assigned negative attributes to the adult who stuttered, the older children (8-13 years) assigned more negative attributes, suggesting that older children hold more negative attitudes towards CWS. The oldest children (11–13 years) indicated a preference to befriend the fluent speaker as opposed to the adult who stuttered, while the younger children did not indicate such preference. When designing

interventions to address negative attitudes one needs to consider the age group in which attitudes are most negative and intervention needed the most.

Negative attitudes towards CWS and negative stereotypes place them at risk for bullying and teasing (Blood & Blood, 2007). The majority of CWS were more upset by teasing and bullying linked to their stuttering than other factors, like weight or hair (Langevin et al., 1998). A reason for this might be that there is more stigma associated with stuttering than other differences (Langevin et al., 1998). There are frequent reports of CWS being called names, or imitated, and their stuttering made fun of (Langevin et al., 1998). The severity of a stutter does not affect how much a child is bullied (Langevin et al., 1998). Therefore, all CWS are at risk of being bullied, even if they have a mild stutter, but stuttering does not guarantee that they will be bullied (Langevin et al., 1998).

Stuttering, and the associated bullying and teasing, can affect the well-being of a child. Learners who are bullied are perceived as vulnerable, less assertive and withdrawn; they possess fewer social skills than non-victims (Fox & Boulton, 2005). Higher anxiety scores, lower self-esteem and a less positive outlook on life were reported by CWS compared to their non-stuttering peers (Blood & Blood, 2007; Blood et al., 2011). Lower self-esteem and a less positive outlook on life were found in CWS when compared to non-stuttering peers (Blood et al., 2011). In addition to negative personal emotions, learners who are bullied have a negative experience of school which is specifically related to peer relationships (Harel-Fisch et al., 2011). These negative feelings may have a long lasting impact as reported by Storch et al. (2003) who requested 414 undergraduate students to reflect on their childhood teasing and current psychosocial distress. The findings indicated that being teased as a child can be related to depression, anxiety and loneliness later in life (Storch et al., 2003). This further translated into being less comfortable later in life with intimacy, trusting others and lower self-esteem (Ledley et al., 2005). Indications are that the impact of bullying on the CWS is severe during school years and will extend into adult life. The severity of the impact of bullying flags the importance of interventions to address this.

- **Need for intervention to address negative attitudes toward CWS**

The negative peer attitudes toward CWS, and the associated teasing and bullying, impacts the daily living of CWS as well as later on in life. According to Langevin et al. (2009) there has been an urgent call over the years, specifically for educational programmes for children about stuttering.

Bullying and teasing is most evident on playgrounds and in the classroom (Langevin et al, 1998). A South African study supported this result by reporting that bullying is mostly found on playgrounds, in classes, as well as in hallways and on stairwells (Greeff & Grobler, 2008). Since bullying and

teasing occurs more frequently within the school setting, it provides a rationale for why intervention would be more effective if implemented in this environment. While implementing school-based intervention programmes, one needs to consider collaboration with teachers.

Craig et al. (2011) conducted a Canadian study with 160 pre-service teachers. The participants felt that their undergraduate education did not provide them with the needed skills to effectively address bullying; they indicated a desire to further their knowledge and skills in ways to reduce bullying (Craig et al., 2011). Since the implications of bullying are serious it strengthens the case for teachers to be involved in intervention by promoting healthy peer-relationships and violence-free schools (Craig et al., 2011).

Sadler (2005) conducted a study with 89 teachers in the United Kingdom about managing children with speech and language impairment in their classrooms. Ninety percent of teachers did not remember information on speech and language impairment being present in their initial training and 71% indicated that they had limited access to resources and SLTs (Sadler, 2005). A study focusing on the attitudes and experiences of UK teachers working with learners with speech and language difficulties – including stuttering – highlighted the three main challenges to be lack of time, resources, and training (Marshall, Ralph & Palmer, 2001). These challenges can be overcome through collaboration and potential training as part of a service-delivery model (Sadler, 2005).

These studies highlight that while teachers do not feel equipped to manage bullying of CWS, they are willing to assist and are requesting support (Craig et al., 2011; Marshall et al., 2001, Sadler, 2005). Teachers' voices need to be heard by SLTs to assist with developing resources for them to implement in their classes. Teachers form an important part of the interdisciplinary team and teachers should understand their role within the management team for a CWS. Resources can be designed by SLTs to educate teachers about stuttering, which in turn may empower teachers to understand how they can assist CWS in a positive manner (Abrahams, 2015). While there are other resources developed in other countries (Langevin, 2000), these may not be applicable to the local context. It is therefore the responsibility of SLTs to design resources that suit the South African context (Pascoe & Norman, 2011). Before considering this one needs to learn from other existing international programmes.

- Existing anti-bully programmes

There are various forms of intervention programmes to address bullying but a schools' approach is the most common (Bell et al., 2010). Implementing an intervention in a group setting is suggested to

be more efficient and cost-effective (Bell et al., 2010). A closer look will be taken at general anti-bully programmes and then at an anti-bully programme specifically aimed at CWS.

The Bully Busters Program (Newman, Horne & Bartolomucci, 2000) is an American, group-based, teacher-targeted, bully reduction programme that was implemented over a one year period. This programme is comprised of four parts: an initial meeting with teachers; seven teacher-training sessions; seven classroom-intervention sessions; and one concluding meeting (Bell, Raczynski & Horne, 2010). This was an abbreviated version of the Bully Busters Program since teachers requested fewer meetings and activities, and for the implementation to be more focussed (Bell et al, 2010). It is suggested that this programme is effective as a way of raising awareness of bullying amongst teachers and learners, and of providing them with skills to reduce bullying. The authors do, however, acknowledge that research is needed on the effectiveness of the Bully Busters Program as well as the most appropriate way for schools to address bullying (Bell et al., 2010). This study was relevant to the development of a South African intervention, since it reinforces that classroom interventions suggest some effectiveness, but that the effectiveness needs to be determined through research, which was lacking in the study. The intensity of this programme is not suited to the South African context due to limited resources and could therefore not be duplicated.

Hillsberg and Spak (2006) agreed that anti-bully programmes should be implemented in classes and proposed that young-adult literature should form the basis of these programmes from Grade 6 to 8. Students would be able to reflect upon bullying and grow through sharing pleasures and pains, hopes and fears found in literature, such as stories. Adolescents should be able to read and identify with such literature. The criteria for the stories include: a memorable protagonist, an engaging plot and themes that empower the one being bullied (Hillsberg & Spak, 2006). If there is an increased understanding of what is read, it might lead to a change in feelings and behaviour (Hillsberg & Spak, 2006). The study supports the structure of the CCR since the themes targeted and components of the role-play were similar to the described study. A contextually relevant story was needed in South Africa since this study stated that children need to identify with the literature.

Shore (2009) similarly argued that some classroom lessons and linked activities should have a bullying theme. Suggestions for classroom activities included story-reading with discussions afterwards, e.g. how the victim of bullying felt afterwards. Role-play was found to be helpful in stimulating discussions on how people might react differently to various social situations (Shore, 2009). This also gave students a chance to voice their own opinions and hear the other options their classmates presented. This study supports the use of role-play in the CCR as well as the related

discussions which increased learner participation. The studies support the structure of the CCR and the method with which it is implemented.

The effectiveness of these particular programmes have however not yet been established. However, anti-bully programmes that have been evaluated (Edwards, Hunt, Meyers, Grogg & Jarrett, 2005; Stevens, Bourdeadhuji & van Oost, 2000) also support the use of role-play, & classroom based activities.

Stevens et al. (2000) developed a 3 module programme captured in a manual and a video based on work done by Olweus (1992). Module one includes information sessions with all the staff at the school, teaching and non-teaching, as well as the parents, to develop an anti-bullying policy. Module two consists of curriculum-based activities for the peer group; encouraging participation through class-based activities such as role-play. Four sessions of 100 minutes each were implemented and booster sessions were recommended throughout the year. Module three targets the learners who are directly involved in aggression, including the bully and the victim. Support was provided to the victim and the bully was given a chance to make up for consequences of negative behaviour (Stevens et al., 2000).

The effectiveness of the programme was assessed through a pretest-posttest design (Stevens et al., 2000). Mixed results were obtained but it was concluded that school-based intervention to reduce bullying can be effective, especially in primary schools (Stevens et al., 2000). This provides some evidence that a pretest-posttest research design can be effective in evaluating intervention programmes, as was done in other studies (Edwards et al., 2005). This study supports the use of role-playing as stated earlier by Shore (2009). Again, the intensity of this programme will not suit the South African context since it will require too much time and human resources to implement.

The efficacy of the Second Step curriculum (Beland, 1992) was evaluated in 455 grade four and five students in the United States (Edwards et al., 2005) by using a pretest-posttest research design. The curriculum aims to promote empathy and impulse control and anger-management to reduce bullying. It was implemented by a school counsellor or research assistant while being observed by the teacher. Weekly lessons of 45-minutes were conducted over a period of 17 weeks (Edwards et al., 2005). Teachers involved in the Second Step curriculum found role-play to be one of the helpful activities (Edwards et al., 2005), which supports the findings of studies above (Shore, 2008; Stevens et al., 2000). A limitation of this study was the lack of a control group which made it difficult to link positive changes to the intervention, although qualitative comments from students did support the quantitative data. The study yielded mixed results but indicated positive gains in learners' empathy,

impulse control, anger-management and bully-proofing (Edwards et al., 2005). It was highlighted that attitudinal changes might take time and longitudinal studies should be conducted to observe the changes over time. Edwards et al., (2005) concluded that violence prevention programmes should be based on research while being developed in context to suit the needs of schools, which strengthens the rationale for developing a classroom-based resource specifically for the South African context.

Some resources that have been developed internationally specifically target negative attitudes towards CWS and associated bullying. It is important to hear CWS' voices in the development of these resources. Hearne, Packman, Onslow and Quine (2008) conducted focus groups and interviews with thirteen adolescents who stutter. The learners reported a general lack of awareness amongst peers, teachers, and parents about what stuttering entails (Hearne et al., 2008). Learners did not wish to talk about this topic themselves but were interested in school-based programmes to raise awareness about stuttering (Hearne et al., 2008). Some learners felt that a better understanding of stuttering would lead to less teasing and they would be less embarrassed to speak (Hearne et al., 2008). Learners felt that the medium of stuttering education should be verbal rather than written (Hearne et al., 2008). These are valuable comments which inform the development of school-based interventions about stuttering.

The main aim of these resources is to raise awareness of stuttering and to aid in changing negative attitudes held by peers towards CWS. They often take on the form of educating classmates about stuttering and this has been perceived to be helpful to peers of CWS (Link & Tellis, 2006) as well as the CWS themselves (Murphy, Yaruss & Quesal, 2007; Turnbull, 2006). This supports the desires that CWS outlined in Hearne et al. (2008) for a school-based programme to educate peers about stuttering.

Langevin (2000) developed the *Teasing and Bullying: Unacceptable Behaviour (TAB)* programme to address general bullying and teasing as well as behaviour related specifically to stuttering. The programme aims to raise awareness about bullying and teasing, and its negative impact on learners, as well as to improve peer interactions in the school-aged population. The resource is administered by the teacher and includes a number of classroom-based activities and strategies (Langevin, 2009). It consists of a 14-minute video and six units of classroom-based lessons originally designed for Grade 4–6 learners. Langevin and Prasad (2012) aimed to evaluate the effectiveness of the TAB by using a pretest-posttest design to measure changes in peer attitudes towards CWS 3 to 4 weeks post-intervention. They used the Peer Attitude Towards Children who Stutter scale (PATCS) as an outcomes measure and found significant differences between pre- and post-test scores. These initial

positive changes indicated that the TAB may be effective in improving peer attitudes towards CWS 3 to 4 weeks after intervention (Langevin & Prasad, 2012). The TAB and research conducted on its effectiveness was helpful in planning the current study. The TAB was also too resource-intensive for the South African setting, but the themes and activities were still of value when developing the CCR. A unique intervention to address peer attitudes towards children who stutter was needed for the South African context and this led to the development of the CCR.

- Classroom Communication Resource

The CCR aims to improve negative peer attitudes towards CWS and as a result to reduce bullying. The CCR is a teacher-resource designed for Grade 7s that can be implemented without the training of a SLT. It is comprised of two parts: The first part includes general information on stuttering and how to manage the CWS in the class; the second part is a classroom lesson which includes role-play and subsequent class discussions. The lesson is focused around a celebration of diversity and individual differences while raising awareness about stuttering. It is a single-dose intervention due to the limited resources within the South African setting and high demand on teachers. A more detailed description of the CRR is included in the methodology. Since the CCR is a newly developed resource there is as yet no evidence of its effectiveness.

- Evaluation of outcomes of CCR

Evidence-based practice can be described as a research-based, client-centred approach used to select treatment (Finn, 2003). Evidence-based practice is not about what a clinician believes but about what helps a client to improve and the most effective treatment should be the focus (Onslow, 2003). Langevin and Kully (2003) looked at EBP linked to stuttering. Amongst other issues, they raised the importance of collecting data that can inform treatment; SLTs that are accountable to clients and their profession for the intervention they select; and that SLTs should seek to improve their academic knowledge. It is imperative therefore, that SLT interventions are subject to rigorous research. Ingham (2003) flagged that there are limited published studies on treatment efficacy in the areas of stuttering and more research is needed in this area.

There is currently no research evidence for the CCR's effectiveness and that was the rationale for conducting this feasibility study. The CCR aims to improve peer attitudes towards children who stutter. Attitudes are the focus of the intervention as part of a process that hope to impact behaviour later on. Changing attitudes is a key part in the process of influencing and changing behaviour. To determine the treatment effect of the CCR, one needed to investigate the magnitude and direction of attitude change after the intervention. To establish the initial treatment benefit of the CCR an outcome measure was needed to suit the South African context. There was no valid or

reliable outcome measure available in South Africa to determine peer attitudes toward CWS. A Canadian scale, the PATCS, was found to be a suitable starting point from which to develop a South African outcomes measure since it already demonstrated some evidence of validity and reliability. It is important to determine if there is a positive treatment effect as part of a feasibility study before further testing is done.

The PATCS scale was designed to measure peer attitudes towards children who stutter and consists of three subscales, namely Positive Social Distance (PSD), Social Pressure (SP) and Verbal Interaction (VI) (Langevin, 2009). It was developed through a series of interviews with learners who stutter and those who do not, as well as by reviewing available scales that measured attitudes towards children with disabilities. The reliability and validity of the PATCS has been previously recorded in literature (Langevin, 2009; Langevin, Kleitman, Packman & Onslow, 2009) so it was seen as a good starting point to develop an outcomes measure for the South African context.

Evidence of the validity and reliability of the PATCS has been previously reported in a Canadian study with 760 participants (Langevin et al., 2009). First, the evidence of validity will be discussed: the construct validity was determined through a confirmatory factor analysis and evidence of convergent validity was provided through a significant moderate correlation with the Pro-Victim scale (Rigby and Slee 1991, 1993). The Pro-Victim scale is used to measure attitudes towards bullying and victims; a moderate correlation (Spearman's rho of 0.43, $p < 0.01$) was expected since CWS are often bullied but not all are victimized.

Evidence of reliability was demonstrated through internal consistency and test-retest reliability. Internal consistency of 0.97 was obtained for the overall scale which is within the range accepted in literature (Langevin et al., 2009). Furthermore, test-retest reliability was considered by calculating the Pearson correlation. The total scale test-retest reliability was 0.88 ($p < 0.01$) at a one-week interval.

The PATCS demonstrated evidence of validity and reliability but had to be adapted to the South African context and this led to the development of the Stuttering Resource Outcomes Measure (SROM). The SROM is a 20-item Likert Scale based on the PATCS. Learners rate their agreement from 1 to 5 with the statements. The three subscales of PSD, VI and SP of the PATCS were kept in the SROM during development. The final SROM score provides a rating of peer attitudes towards CWS. A description on how the SROM was developed is included in the methodology of this study.

Although the validity and reliability was considered when adapting the SROM, this is a process that needs to continue as part of this feasibility study. It is challenging to determine validity when

measuring certain abstract components, for example happiness or pain, as there are no golden standard measures (McDowell, 2006). It can be argued that attitudes fall into this group of abstract components and that construct validity is used to indicate validity. Construct validity refers to the degree to which an instrument measures a specific construct (Haynes & Johnson, 2009) and it had to be established if the SROM measures what is intended. In addition to measuring a construct, the researcher also had to consider if the SROM could measure change within the construct – peer attitudes towards CWS in this case. The PATCS already indicated evidence of internal consistency and test-retest reliability (Langevin et al., 2009) but this had to be determined for the SROM as part of this study.

As part of evaluating the initial treatment effect of the CCR, two additional variables were investigated: gender and exposure to someone who stutters have been reported to influence peer attitudes towards CWS. These variables might play a role in how participants respond to the CCR and were included in this study as variables of interest. Reasons for this are discussed below.

- **Differences in attitudes between males and females**

Different studies in other parts of the world investigated the relationship between gender, and teasing and bullying linked to stuttering, and found that there was no difference between males and females in their attitudes towards peers who stutter (Evans, Healey, Kawai & Rowland, 2008; Hartford & Leahy, 2007; Langevin & Hagler, 2004; St. Louis, 2011). However, others have found males to have more negative attitudes towards CWS than females (Dietrich, Jensen & Williams, 2001; Langevin, 2009, Wiesel & Spektor, 1998). This inconclusive literature, and limited studies in the South African context, validates further investigation into this variable. Gender is also of interest in the stuttering population since more males present with stuttering than females (Reilly, 2009) and this might influence how peers react to CWS as well as how they react to intervention. This information was valuable in determining the effectiveness of the CCR and, if possible, changes in attitude that differ across gender. It enabled the researcher to determine if the intervention was successful in both males and females or if some consideration should be given to how peer attitudes towards CWS are addressed across gender.

- **Impact of knowing someone who stutters on attitudes**

The attitudes of 268 teachers in the UK towards children with speech and language difficulties were evaluated (Marshall, Ralph & Palmer, 2002). The results indicated that 47% of participants knew a person with a speech and language difficulty, and that stuttering was the most evident of these difficulties (Marshall et al., 2002). Results indicated that attitudes towards colleagues were more negative than towards friends (Marshall et al., 2002). The researchers argued that this might be

because friends are chosen and colleagues are not (Marshall et al., 2002). Although this study was conducted on adults, it indicates that exposure, and the relationship, to someone with a speech and language difficulty can influence one's attitude.

Different studies in Canada have indicated that a child who knows a person who stutters will have a less negative attitude towards peers who stutter (Langevin, 2009; Langevin et al., 2009). There is currently no research on this variable in the South African context. This information can inform researchers whether the effectiveness of the intervention was influenced by having exposure to someone who stutters or not.

- **Summary**

The teasing and bullying associated with stuttering can have a long-lasting impact on CWS. School-based interventions are needed to raise awareness about stuttering and improve peer attitudes towards CWS. These interventions do, however, need to be evaluated for efficacy. The validity and reliability of the SROM had to be determined before it could be used as a contextually relevant outcomes measure in this study. Subsequently, the initial treatment benefits of a locally-developed resource, the CCR, were investigated as part of a feasibility study. The variable of gender and exposure to someone who stutters was included, since these can influence how participants respond to the intervention.

CHAPTER THREE: METHODOLOGY

3.1. Overview of chapter

This chapter describes the methodology for the study in relation to the two aims. The methodology to achieve each aim is presented by describing their research design, participants, procedure and data analysis separately. A section on ethical considerations is included at the end of the chapter.

3.2. Research Aims and Objectives

Aim One:

To determine the validity and reliability of the Stuttering Resource Outcomes Measure (SROM) as an outcomes measure.

Objectives:

Aim One (a) To determine the construct validity of the Stuttering Resource Outcomes Measure (SROM).

Aim One (b) To determine the internal consistency and test-retest reliability of the Stuttering Resource Outcomes Measure (SROM).

Aim Two:

To determine whether participants' attitudes towards Children Who Stutter (CWS) changed following the administration of the Classroom Communication Resource (CCR).

Objectives:

Aim Two (a) To describe and compare the direction and magnitude of participants' attitude changes, from pre- to post-test, in the experimental and control group.

Aim Two (b) To determine if the attitude changes, or lack thereof, were related to the subscales of the Stuttering Resource Outcomes Measure (SROM).

Aim Two (c) To determine if the attitude changes, or lack thereof, were influenced by

- *gender*
- *previous exposure to someone who stutters*

3.6. Method for Aim One

3.3.1. Research Design

For Aim One a retrospective review of data sets from a quantitative, pretest-posttest design study was conducted. The datasets were extracted from a University of Cape Town undergraduate research study investigating changes in peer attitudes after the administration of the CCR (de Grass et al., 2010). The data sets from the de Grass et al. (2010) study were accessed since it was a related study as part of a larger project.

The SROM was used as the outcomes measure to record attitude ratings of peers towards CWS during pre- and post-test in both the control and experimental groups, and the CCR was implemented only in the experimental groups. This study served as an early pilot on outcomes of the SROM and CCR; the study was exploratory in nature which led to the subsequent revision of the CCR. The de Grass et al. (2010) study's sample size was not sufficiently powered to investigate issues around feasibility for a larger, Cluster Randomized Control Trial (CRT) but the design used was similar to the current feasibility study; therefore, the data could be used to inform part of the current study. Retrospective data was utilized to investigate the validity and reliability of the SROM as the data set from de Grass et al. (2010) study provided the only available information on the use of the SROM. This retrospective analysis of data is a vital component of a feasibility study since it is often used to gain a better understanding of data collection tools (Thabane et al., 2010).

3.3.2. Participants

There were 138 participants from English-medium, mixed-gender Grade 7 classes. Learners were between the ages of 12 and 13 years from diverse racial and linguistic backgrounds but only needed English proficiency to complete the SROM and did not have to be English first-language speakers. Grade 7 learners were specifically selected since it was previously reported that the CCR best suited the literacy level of that age and it is also within the age range where teasing and bullying is at its peak.

3.3.3. Sample size

The data sets consisted of pre- and post-test scores on the SROM for both the control and experimental group. A total of 138 participants were included; the control group consisted of 67 participants and the experimental group of 71 participants.

3.3.4. Method of recruitment

No participants were recruited for this aim since retrospective data was accessed from a previous, related study (de Grass et al., 2010). The study met all ethical requirements and two schools within the Cape Town Metropolitan area were randomly selected from a list of schools from the Department of Education (Western Province).

3.3.5. Sampling method

For this aim, non-probability convenience sampling (Leedy & Ormrod, 2005) was used, as all available data sets from the previous research study were included.

3.3.6. Research Instruments

For the purpose of this aim the SROM is discussed in detail since it was the tool used to measure outcomes during pre- and post-test. In addition, the CCR is described as it was the classroom-based resource used in the experimental groups.

- Stuttering Resource Outcomes Measure

The Stuttering Outcomes Measure (SROM) (see Appendix B) was developed by adapting the Peer Attitudes towards Children who Stutter (PATCS) scale (Langevin & Hagler, 2004). The SROM is a 20-item Likert scale.

The 40 items of the PATCS scale were reduced to 20 items to decrease the administration time and to adjust the items to suit the South African context. The three subscales, namely Positive Social Distance (PSD), Social Pressure (SP) and Verbal Interaction (VI) were still maintained on the scale. The PSD subscale focusses on how comfortable peers are with being around CWS (e.g. 'I would be happy to have a child who stutters for a friend.'). The SP subscale targets how concerned one is about what others think about CWS (e.g. 'I would avoid a child who stutters.'). Lastly, the VI items are structured around how frustrated listeners are when communicating with a CWS (e.g. 'Listening to a child who stutters would annoy me.'). (Langevin, 2009; Langevin & Hagler, 2004).

Learners were presented with twenty statements and had to rate their attitudes on this Likert response-scale ranging from strongly agree (5) to strongly disagree (1) with 3 being a neutral response ('not sure'). The same 5-point Likert scale was used as the PATCS. Rating scales of less than five items are not recommended; if there are too few categories the scale may not be able to differentiate between participants with different attitudes (Weng, 2009). If there are too many

categories it may be difficult for participants to distinguish reliably between adjacent categories, e.g. between 7 and 8 on a 10-point scale (Weng, 2009). A portion of negatively worded items (i.e. disagreeing with the descriptor would indicate a more positive attitude towards learners who stutter) were also maintained as this prevents response bias (Tapper et al., 2007). A total score on the SROM of 100 would indicate the most positive rating of attitude towards CWS and a zero the most negative.

- **Classroom Communication Resource (CCR)**

Although the context might be different in South Africa when compared with other countries, the universal phenomena of teasing and bullying of CWS still exists. The CCR (see Appendix A) was developed as a response to calls for the development of programmes to educate learners about stuttering and in an attempt to improve peer attitudes toward CWS.

The CCR had to be simple enough for learners to understand and participate in if they attended an English mainstream school, regardless of whether this was their first language or not. The resource targets Grade 7 learners since 12 to 13 years is the age range in which bullying and teasing is most evident. Since there are limited Speech-Language Therapists available to provide classroom intervention, the CCR is designed as a teacher-resource that can be implemented without the training or the presence of a SLT. It is also a low-tech intervention that does not need additional resources, e.g. video players, since many schools will not have access to such equipment.

The CCR is comprised of two sections: The first part is a written information section for teachers explaining the nature of stuttering, the aim of the resource, as well as some general guidelines on how to manage CWS in the classroom, for instance how to reduce pressure on the child while communicating. The second part includes the classroom intervention component, consisting of a culturally appropriate, social story about a CWS and how he is accepted into a circle of friends through celebration of diversity. Learners then take part in a role-play activity related to the story to increase participation. Learners are engaged in related class discussions after the role-play to raise awareness of communication disorders as well as teasing and bullying.

The classroom intervention is implemented by the teacher in a single lesson but the themes are reinforced through the different activities; this makes the CCR unique as other programmes are implemented over a longer period of time. The reason for designing a single-dose intervention was the limited time and resources teachers have to devote to additional teaching material. The *Teasing and Bullying: Unacceptable Behavior (TAB)* programme has been evaluated to bring about a positive shift in peer attitudes towards CWS (Langevin, 2009). The CCR targeted similar themes and activities

as the TAB, for example, addressing acceptance of CWS by discussing similarities and uniqueness (Langevin, 2009).

3.3.7. Validity and reliability of SROM

Since Aim One was to determine the validity and reliability of the SROM there was limited information available to discuss before conducting an analysis of results. The results are discussed in Chapter Four, however, Chapter Two contains evidence of the validity and reliability of the PATCS (Langevin & Hagler, 2004) from which the SROM was developed. A summary of how validity and reliability was considered during the development of the SROM is outlined below.

Face validity was upheld during the adaption process through six speech-language therapists recommending the retention of the most relevant items. Since evidence of the validity of the PATCS scale was already available, the weighting of the three constructs in the subscales (PSD, VI and SP) was retained for the SROM.

The vocabulary and content of the remaining items were reviewed - and subsequently changed - after a cognitive debriefing session with six Grade 7 learners who provided input on the items and words used (Filies et al., 2009). This cognitive debriefing session aided in understanding how learners mentally processed, understood, and responded to the questionnaire (Coons et al., 2009). The practice items were changed according to the South African context. For example 'Wayne Gretzki is a great hockey player' was changed to 'Bryan Habana is a great rugby player'. The original vocabulary was substituted with similar South African words to ensure the children understood the items; for example, 'store' was changed to 'shop' and 'recess' was changed to 'break time'.

For reliability, the internal consistency and test-retest reliability of the SROM was investigated in Aim One as an initial step in establishing evidence of the psychometric qualities. Internal Consistency Reliability in isolation is inadequate for understanding scale-reliability in the developmental phases (Weng, 2009). Test-retest reliability had to be determined in addition to internal consistency reliability because a scale with poor test-retest reliability can produce inaccurate conclusions (Weng, 2009). Evidence of this reliability of the SROM was not available before this study and formed part of Aim One. The results are discussed in the following chapter.

Two additional items were added to the SROM: the learners had to indicate their gender and whether they had been previously exposed to someone who stutters. These variables may influence peer attitudes towards CWS and were thus of interest for this study ((Dietrich et al., 2001; Langevin, 2009; Langevin et al., 2009; Wiesel & Spektor, 1998).

3.3.8. Procedure

The data sets were captured separately in Microsoft Excel spreadsheets for control and experimental groups and for pre- and post-test. All attitude ratings (out of 5) for the twenty items on the SROM were captured for each participant. The total score for each SROM (out of 100) was also recorded for each participant during pre- and post-test. Data was coded to ensure that pre-and posttest data for a single participant could be linked. The researcher re-checked all the data captured in order to adhere to intra-rater reliability. The sample size was small enough to check all the data in the set for agreement. Intra-rater reliability improves the quality of the measurement by ensuring correct scores were captured (Kottner et al., 2011).

3.3.9. Data analysis

Data analysis was conducted to provide evidence of validity and reliability of the SROM. Validity and reliability will be discussed separately.

Validity

- Construct validity

Construct validity of the SROM was indicated through evidence of the ability to differentiate between different groups (McDowell, 2006); these were the experimental and control groups.

A significant change in the experimental group's SROM score when compared to the control group would indicate that the SROM is a valid outcomes measure for detecting changes in attitudes towards CWS and thus measuring the construct of attitude. However, if there was no change, it does not indicate that the SROM was not a good outcomes measure; it might just flag that the intervention was not effective in changing peer attitudes towards CWS. T-tests were used to determine if there was a mean difference between the pre- and post-test for the experimental and control groups. T-tests are an effective, statistical-analysis method to distinguish between groups (McDonald, 2014).

Reliability

- Internal consistency

Internal consistency reliability refers to the extent to which all the items on an instrument yield similar results (Leedy & Ormrod, 2005). Cronbach's coefficient alpha is most often used to indicate internal consistency (McDowell, 2006). The Cronbach's alpha refers to the variance of the total score to that of the individual items on the scale (Haynes & Johnson, 2009) and in the case of this study the Cronbach's coefficient will indicate the degree to which the items on the SROM measured the

construct of peer attitudes towards CWS and similarly for the three different subscales of which each represented a sub-construct. The internal consistency was calculated for the overall scale as well as the three subscales.

- Test-Retest Reliability

Test-retest reliability refers to the extent to which the same instrument will yield the same result when it is repeated (Leedy & Ormrod, 2005) and stays stable (Weng, 2009). If results at the two points of measurement are compared they would be expected to match (McDowell, 2006). Test-retest reliability was investigated by determining if there was a significant difference between the pre- and post-test scores of the control group. The SROM was completed by the participants during the pre- and post-test phase and the data obtained analysed. Since the control group received no intervention the hypothesis would be that their scores should have remained unchanged. T-tests were used to statistically determine if there were differences in SROM scores from pre- to post-test (McDonald, 2014).

Once the validity and reliability of the SROM was determined according to the method set out above, the second aim of the study was addressed. The methodology for Aim Two is set out below.

3.4. Method for Aim Two

3.6.1. Research design

For this study an experimental, pretest-posttest cluster randomized trial-design was used. Experimental designs have proven to be especially useful when evaluating the outcomes of an intervention programme (Gribbons & Herman, 1997). As part of an experimental design a Randomized Control Trial is seen as providing the best quality and most reliable evidence of effectiveness of interventions (Evans, 2003). However, when random allocation of individuals to intervention and control groups is not feasible, groups are often randomized in a Cluster Randomized Trial (CRT) (Campbell, Piaggio, Elbourne & Altan, 2012). Since the CCR was implemented in classes, individual participants could not be randomly allocated to experimental and control groups. Therefore, classes were treated as clusters within schools. The schools were randomly assigned to experimental and control groups. Randomization was important to prevent selection bias since other forms of allocation to groups might be open to bias because decisions might be based on responsiveness to treatment (Kunz, Vist & Oxman, 2008).

The CRT was divided into a pre- and post-test with the CCR being implemented in the experimental group. The pre-test results can confirm that the control and experimental groups are similar in terms of the dependent variable under investigation, in this case peer attitudes towards CWS (Leedy &

Ormrod, 2005). The pretest-posttest comparison of data between experimental and control groups strengthens the confidence that the results obtained in experimental groups were a direct effect of the intervention programme and not a function of external events or variables (Leedy & Ormrod, 2005).

The current study served as a feasibility study to explore the potential for a larger-scale CRT in the future. A CRT design was followed but the sample size was too small to make inferences about the effectiveness of the intervention. Consideration should also be given to the fact that this CRT was set up as a feasibility study for a full-scale CRT at a later stage if the results indicate that the study is feasible. This would imply that the design was set up to investigate issues around feasibility and not to determine statistical differences between groups to evaluate efficacy of the CCR. Feasibility studies are designed to provide some initial results on the efficacy of intervention as well as to aid in planning a larger scale study (Thabane et al, 2010).

3.6.2. Participants

A CRT research design involves more than one level of investigation by nature (Campbell et al., 2012). The levels for the current study were the cluster (class) level at which intervention was provided and the individuals within these clusters. Inclusion and exclusion criteria need to be outlined for both levels. A detailed description follows of the criteria set for schools from which clusters were selected as well as for the individual participants.

- Inclusion and exclusion criteria for clusters

Schools in Quintile 4 and 5 (least poor) on the National Poverty distribution table within the Western Cape Education Department were included in this study; they were selected to expand the populations on which this resource has been administered. Previous research studies focused on schools in Quintile 1 and 2 (poorest). In developing a teacher-administered resource like the CCR one should aim to determine if the resource has relevance in the whole population for which it was designed.

Schools that have been exposed to the specific classroom intervention during previous research studies or Speech-Language prevention and promotion activities were excluded from the study. Schools with an available on-site speech-language therapist were also excluded from the study since the therapist might have engaged in classroom intervention or teacher-training on stuttering. Prior intervention would be a confounding variable in the study and may influence the reliability of results. Grade 7 classes within these schools were included since the CCR was developed to be applicable to teachers and Grade 7s across the quintiles found in South Africa.

Inclusion and exclusion criteria for individual participants

- **Learners in Grade 7**

Literature has indicated that Grade 7 and 8 learners are more prone to experience teasing and bullying (Evans et al., 2008). For this reason the CCR targets this specific age group as they will potentially benefit most from this intervention. The class activities that form part of the CCR were specifically designed to suit the literacy levels of this age group. During the development of the resource the vocabulary was simplified on more than one occasion to be appropriate for South African Grade 7 learners. The SROM is also suitable for the literacy levels of this age range.

- **Mixed gender classes**

Participants in mixed gender classes were selected since the variable of gender was investigated as part of this study and since gender can influence attitudes towards CWS (Dietrich et al., 2001; Langevin, 2009, Wiesel & Spektor, 1998).

- **Language of learning was English**

The CCR was developed in English; once it has been determined that this is an effective intervention the possibility of translating it into other languages can be explored. There are eleven official languages in South Africa and the classes represent learners from all of these. Although the language of learning was English for the participants, learners may have been second- or third-language English speakers because of the diverse nature of South African classrooms.

No exclusion criteria for participants were set for this study, and since the resource was designed to be implemented in a diverse classroom, the researcher wanted to determine the outcomes on the whole population as it was a representation of a real-life classroom situation. This is also the reason why CWS were included in the study, since they form part of classrooms in South Africa where the resource will be implemented.

3.6.3. Sample size and description

There were 196 participants in this study. The control group contained 110 participants and the experimental group 86. There were 47 females and 39 males in the experimental group. The control group contained 70 participants who knew someone who stutters and 40 who did not. In the experimental group, 75 participants had been exposed to someone who stutters and 11 had not. These scores signalled a high level of exposure; some exposure was more distant, for example at church, whereas others were closer and on a more regular basis, for instance at school. The experimental group had more exposure to persons who stutter than the control group.

As this is a new area of research there is not sufficient information available from previous studies, for instance pre- and post-test means, to conduct a reliable power analysis. Since this is a feasibility study for a CRT, a full-power analysis was not needed at this stage although various factors were taken into account while estimating sample size. The sample size was calculated using the means of the de Grass et al. (2010) study to inform a power-analysis as well as increasing the sample size used in the previous study. The researcher acknowledges that in a CRT the sample size needed to be bigger than in an individual, randomized trial to have the same statistical power (Campbell et al, 2012). In this feasibility study the focus is, however, not on statistical significance of treatment effects (Thabane et al., 2010) so the power-analysis was used as a guideline. The sample size was considered to be sufficient to investigate issues of feasibility. The data generated from the current study can help to inform future sample-size calculation more accurately if the goal is to determine treatment effects.

3.6.4. Method of Recruitment:

After ethics approval was granted by the Faculty of Health Sciences Human Research Ethics Committee (FHS HREC ref: 601/2012) (Appendix C) and permission was obtained from the Department of Education (Appendix D), schools in Quintile 4 and 5 were contacted from a list obtained from the Department of Education. Meetings were set up with the principals to discuss the research study and to obtain permission to use the school as a research site (See Appendix E). Teachers were identified by principals and contacted by the researcher. The study was explained and permission obtained from teachers to conduct the study in their classes (See Appendix F). Informed consent was also obtained from the learners' parents (See Appendix G) as well as assent from the learners themselves (See Appendix H). If any of the participants did not give assent to take part in the study they would have been excluded, but no learners refused to take part. Not all the learners in the class however participated in the study. Some learners were absent during either the pre- or posttest of the study and did not yield complete data sets and were excluded on that basis. Other learners' parents did not send back consent forms to school and these learners were not included in the study.

3.6.5. Sampling method

A CRT was used in this study. According to Guarte and Barrios (2006) it is the random selection of participants within a part of the population that holds the most information on the factors you intend to study. Since the participants could not be randomized the classes were treated as clusters within schools. The schools were randomly assigned to experimental and control groups. In the case

where more than one class was used from a school, both classes were randomly assigned to either the experimental or control group. The reason for this being that participants might have contact with each other outside the classroom, for instance on the playground, which could potentially have contaminated the results through an unintentional translation of treatment effect from one group to the other (Campbell et al., 2012).

3.6.6. Research instruments

- **Stuttering Resource Outcomes Measure (SROM)**

The SROM (See Appendix B) has been explained in detail in the methodology of Aim One. The validity and reliability of the SROM was determined in Aim One so that it could be used as an outcome measure in Aim Two.

- **The Classroom Communication Resource (CCR)**

A description of the CCR (see Appendix A) was included in the methodology of Aim One.

3.6.7. Validity and Reliability

- **Stuttering Resource Outcomes Measure (SROM)**

The validity and reliability of the SROM itself will be discussed in detail in the following chapter since this was part of Aim One. Validity and reliability were also considered during the administration of the SROM. All research assistants were trained by the researcher and provided with guidelines on how to administer the SROM.

- **The Classroom Communication Resource (CCR)**

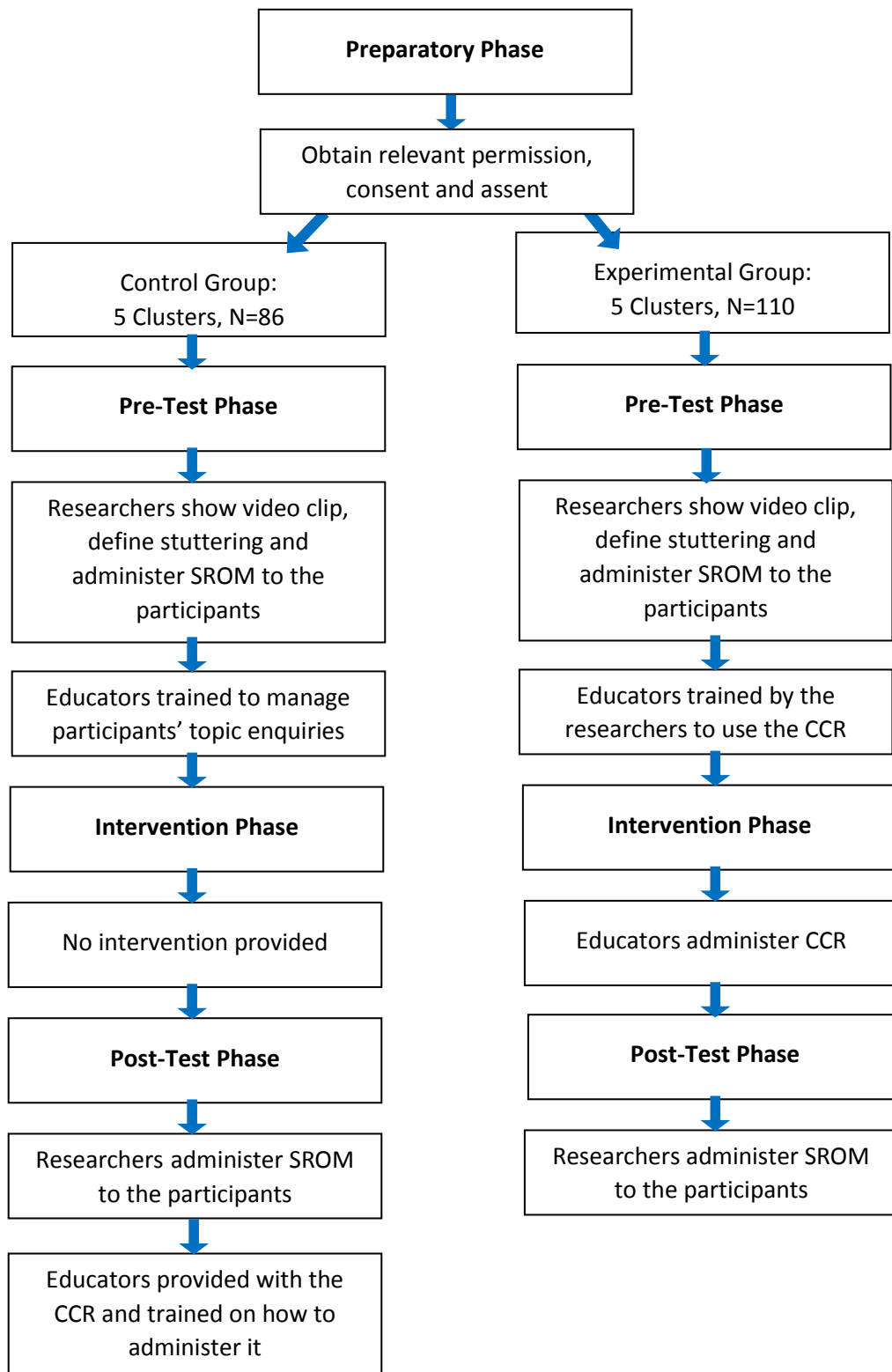
The CCR was found to bring about small, positive shifts in peer attitudes in the de Grass et al. (2010) study. This provided preliminary evidence that the CCR is a valid resource to bring about positive change in peer attitudes towards CWS. Since this is a new resource, and the attitude changes were investigated in the current study; the evidence of validity will grow over time as the research base expands.

To address reliability in the administration of the CCR by teachers, guidelines on administration form part of the CCR and are included to guide the teacher. The aims of the research were explained to the teachers and that they should follow the resource only as instructed and not add or exclude items. The researcher was present in the classrooms when the teachers administered the resource in order to ensure that it was carried out according to the guidelines and to identify any confounding variables. This ensured that the CCR was implemented in the same way across the different clusters.

3.6.8. Procedure

For visual representation of the procedure see Figure 1.

Figure 1. Procedure Flowchart for Aim Two



- **Preparatory phase**

Principals were contacted (Appendix E) and permission obtained to conduct the study in their schools. They were asked to identify Grade 7 teachers and classes to participate. Permission from the teachers (Appendix F) and consent from the participants' parents (Appendix G) was obtained, as well as assent from the participants (Appendix H). Schools were randomly allocated to experimental and control groups through random selection.

- **Pre-Test Phase**

All participants in experimental and control groups took part in this stage of the procedure. Before completing the SROM, the participants watched a short video clip of a primary school child who presented with moderate to severe stuttering. This video clip was included to ensure that all participants had the same understanding of what the term 'stuttering' meant, particularly if they had not been previously exposed to a person who stuttered. A definition of stuttering suitable for Grade 7 learners was explained to the participants to ensure they understood what this entailed. Before completing the Likert scale, participants had to indicate descriptive information regarding gender and exposure to someone who stutters on the SROM. Learners had to indicate who the person was who stutters. Some children indicated more than one person and both responses were then captured. This information was added since these were aspects under investigation in this study.

The SROM was then administered to all participants by the researcher. Four practice items were completed to familiarize the participants with how to complete a Likert scale. Learners were instructed that there are no right or wrong answers and that answers which were most true to them must be selected. The researcher read the statements to the learners and explained any terms that the class may have had difficulty understanding; this accounted for participants who might have reading difficulty. They then had the opportunity to re-read the statement on their scale and choose the answer which best described their level of agreement. The researcher assured the participants that there was no right or wrong answer and that they should select the answer that is true to them.

- **Intervention Phase**

The researcher provided the CCR to the teachers of the experimental group. A meeting time was scheduled with the teacher, for example at break time. The researcher conducted a short

information session of 30 minutes with the teacher on the aim of the CCR and how to administer it. There was an opportunity for the teacher to direct questions to the researcher regarding the administration. Clear, written guidelines on administration were also provided in the CCR itself since the aim is to develop a resource that can be used by teachers with minimal-to-no training from a SLT.

The teachers had time to review the resource prior to administering it in a follow-up session two weeks later. The researcher observed the teachers implementing the classroom-based activities from the CCR to ensure the resource was administered accurately and consistently across the clusters, as differences or deviations may have affected the results. The control groups did not receive intervention at this stage.

- **Post-Test Phase**

Once the intervention was completed in the experimental group the SROM was again administered by the researcher to both the control and experimental groups (one month later) to determine the rating of the participants' attitudes towards CWS. The teachers of the control group received and administered the classroom-based activities of the CCR in their classes for the participants' potential benefit after completion of data collection.

3.6.9. Data Analysis

The data from the SROM was captured onto a Microsoft Excel Spreadsheet to assist with analysis. The data was coded to link pre- and post-test results of participants as well as to indicate which clusters (classes) they belonged to within the experimental and control groups. The results of each of the twenty SROM items were captured for each participant for the pre- and post-test. All negatively-worded items were reverse scored during this process. The overall score was calculated out of 100 for each SROM. Data from this Cluster-Randomized feasibility study was analysed on both the cluster and individual levels. A description of how the data was analysed in relation to each objective follows.

- **Overall and cluster changes in SROM scores:**

As part of a quantitative design, inferential statistics were used during analysis of the overall SROM score changes in the control and experimental groups (Durheim, 2006). The data was normally distributed and thus paired t-tests could be used (McDonald, 2014). Paired t-tests are used to determine if there is a mean difference in pairs (McDonald, 2014). For this study Paired t-tests were utilized to determine whether there were differences between the overall pre- and post-test SROM scores in experimental and control groups.

The focus was then shifted to the clusters within the experimental and control groups. The classes in each group were seen as clusters during data analysis. Clusters in the control and experimental groups were randomly numbered to enable comparison during analysis. A generalized estimating equations (GEE) approach is used to evaluate the outcomes of CRTs (Ma, Raina, Beyene & Thabane, 2013). This approach is an analysis method often used to determine the population-averaged treatment effect of a CRT (Ma et al., 2013). GEE population-averaged models were used during analysis to determine if there were differences or interactions between clusters within the experimental and control groups respectively. This was to determine how clusters varied as the intervention, the CCR, was implemented in clusters, and in this study these clusters were different classes.

- **SROM score changes in subscale and individual items**

A more detailed analysis followed, which considered the change in the three constructs of the SROM (Verbal Interaction, Positive Social Distance and Social Pressure) as well as the twenty individual items on the SROM. This helped to determine whether there were certain constructs or items that changed more than others. Only the data from the experimental group was used for this purpose since the hypothesis would be that this would be the only group that presented with a change due to the intervention. If no change was observed in the SROM scores it would still be of value indicating that the intervention brought about no change. For the subscales, t-tests and Wilcoxon signed-rank tests were used. T-tests were used to determine if there was a mean difference in pairs between the pre- and post-test (McDonald, 2014). A paired t-test was used to analyse the changes in mean from pre- to post-test for the PSD construct, since the distribution was adequately normal. Wilcoxon signed-rank tests are used when t-tests cannot be conducted due to the data being non-normally distributed (McDonald, 2014). Wilcoxon signed-rank tests were used for VI and SP because the distribution of data for these two constructs were not normal. Descriptive statistics were used to determine which individual items on the SROM changed the most or least through comparison of means.

- **SROM score changes linked to gender and exposure to someone who stutters**

Finally the changes in SROM scores were analysed by considering the differences linked to the variables of gender and exposure to someone who stutters. Only the experimental group data was analysed for this objective since it was the only group that presented with a change in SROM scores. The data used for this objective was normally distributed and paired t-tests could be used to investigate the differences between groups. The data from the experimental group was divided into male and female groups and paired t-tests conducted. Male and female scores were compared to

see whether changes in SROM scores, if any, had greater magnitude in one group or the other. The initial scores (before intervention) were also considered and compared to determine whether one gender started with more a positive SROM score before intervention.

The experimental group data was grouped into participants who knew someone who stutters and those who did not. Comparisons were made between the groups to determine if one of the groups had higher SROM scores in the pre-test phase, and also if one of the groups showed greater magnitude of change, if any, in SROM scores after intervention.

3.7. Ethical considerations

The process of ethical approval began with obtaining approval from the Faculty of Health Sciences Human Research Ethics Committee (FHS HREC ref: 601/2012) and thereafter the Western Cape Department of Education. To guarantee that the rights of the research participants in this study were upheld and to safeguard their interests, respect for autonomy, confidentiality, beneficence, non-maleficence and justice was considered according to the Helsinki Declaration (2013).

- Autonomy

Autonomy refers to respect for the person (Medical Research Council, 2000). This implies that persons have the right to make their own decisions and that those decisions should be respected by the researcher.

In this particular study, respect for the participants demands that they enter into the study voluntarily and with adequate information (Medical Research Council, 2000). The research study was explained in non-technical language (Campbell, Gillet & Jones, 2006) and included a clear description of risks and benefits that might have been involved in this study, as well as the assurance that participants could withdraw from the study at any stage without being penalized in any way (Campbell et al., 2006; Du Mont & Stermac, 1996). This was a low-risk study without negative impact on participants. All of the participants were informed that they have the right to withdraw from the study at any stage and this considered their right to make their own decisions. This is motivated by Williams (2008), who explains that the decision-making process in research related to older children should include the assent of the child as well as parental consent. Apart from consent obtained from the parents, assent was obtained from the participants before taking part in this study. Participants who presented with stuttering were more vulnerable than learners who do not due to the nature of the intervention. All the participants who stuttered, nevertheless, assented to take part in the study after this was explained to them.

- **Confidentiality and Anonymity**

Furthermore, confidentiality emerges from the basic principle of respect for persons, including people's right to control their information and protect their privacy (Fontes, 2004). During the study coding systems were used to record data of the participants to ensure anonymity and confidentiality (Fontes, 2004). The SROM forms, and class lists with participant names and codes, were stored separately to ensure that there was no identifying information with the data. Data was safeguarded by the researcher by locking it away securely and by the use of passwords on electronic documents.

- **Beneficence**

Beneficence refers to the provision of benefits to the participant and balancing those benefits against the risk of participation (Fontes, 2004). There were no risks involved in this study, but there were potential benefits. The teachers gained knowledge on how to manage communication difficulties in their classes and the learners had a raised level of awareness on stuttering and might have gained more insight into how to react towards a peer who stutters. Participants who presented with stuttering could be referred to SLTs for intervention if they were not yet receiving therapy. All participants who stuttered were already being managed by SLTs and no referrals were needed.

- **Non-Maleficence**

According to the Helsinki Protocol, research should only be carried out if the potential benefits of the study outweigh the potential harm, and the well-being of the participants takes precedence over the interests of science (Fontes, 2004). In other words, non-maleficence refers to absence of harm to the research participants (Medical Research Council, 2000). There are no risks or harm involved in participating in this study. The de Grass et al (2010) study indicated a potential positive treatment benefit of the CCR. No negative effects were noted, however, teachers were asked to monitor the classes for potential counterproductive attitudes and behaviours that might arise so that they could be addressed. No reports of negative attitudes or behaviour changes linked to the study were received.

- **Justice**

Distributive justice refers to the notion that benefits and burdens of research should be shared equitably (Fontes, 2004). The class of persons bearing the burden should receive an appropriate benefit and the class primarily intended to benefit should bear a fair amount of the burden of the study (Fontes, 2004). This resource was developed for all Grade 7 mainstream classes. The higher quintiles carried the burden in this specific study but also potentially benefitted from it. The participants in the study benefitted from the research as they were educated about stuttering.

Randomization was used so all schools had an equal chance of being included in the experimental and control groups.

CHAPTER 4: RESULTS AND DISCUSSION AIM ONE

4.1. Overview of the chapter

In this chapter the results for Aim One are presented followed by the discussion. This format was chosen for ease of presentation.

4.2. Results

4.2.1. Validity of the SROM

The construct validity of the SROM was determined by its ability to measure peer attitudes towards CWS by differentiating between the control and experimental group, as well pre- and post-test. There was a significant difference between the SROM pre-test results ($M=3.54$, $SD=1.24$) and post-test results ($M=3.83$, $SD=1.15$) in the experimental group; $t(2846.75) = 6.54$, $p<.001$. However, there was no significant difference between the pre-test ($M=3.50$, $SD=1.22$) and post-test ($M=3.55$, $SD=1.20$) results of the control group; $t(2718) = 1.20$, $p=.23$. These results indicate that the SROM scores in the experimental group changed significantly after the administration of the CCR.

Further the post-test results of the experimental and control groups were compared. There was a significant difference between the control ($M=3.55$, $SD=1.21$) and the experimental group ($M=3.83$, $SD=1.15$) during the post-test phase; $t(2758) = -6.12$, $p<.001$. This result provides evidence that the SROM can be used as an outcomes measure for peer attitudes towards CWS.

4.2.2. Reliability

- Internal Consistency

Table 1 indicates that the internal consistency for the total SROM was .94 indicating that it is a good measure of internal consistency as it is within the range of 0.70 – 0.95 which is considered good

(Terwee et al., 2007). A proposed criterion of 0.70 – 0.90 is seen as a measure of good internal consistency (Terwee et al., 2007). The internal consistency measures for the individual subscales were lower than the total SROM. The PSD and SP subscales remained within the recommended range, however, the VI subscale had an internal consistency of .58 which was lower than the range recommended in literature.

Table 1

SROM: Internal Consistency and Test-Retest reliability findings

Internal Consistency (Cronbach Alpha)	
- Total scale	.94
- PSD	.90
- SP	.70
- VI	.58
Test-Retest (Pearson) Correlation	
- Total scale	.84
- PSD	.82
- SP	.67
- VI	.51

- Test-Retest Reliability

The test-retest reliability for the total SROM was .84 ($p < 0.005$) as can be seen in Table 1. The recommendation is for a correlation to be .75 or higher (Streiner, 2003). The test-retest reliability for the subscales ranged from .82 to .51. PSD met the suggested minimum value set at .75 but SP and VI fell below this level.

4.3. Discussion

The SROM was successful in distinguishing between the experimental and the control groups. There were no significant changes detected in the control group but the SROM scores in the experimental group shifted more positively after the administration of the CCR. This positive shift in the experimental group can be linked to the intervention since the control group did not present with any changes in SROM scores. This change provides some preliminary evidence of the construct validity of the SROM.

Construct validity refers to an instrument's ability to measure a specific construct and, based on this, to be able to distinguish between groups (Kind, Jones & Barmby, 2007). The construct in the case of the SROM was peer attitudes towards CWS. The CCR aims to improve attitudes of peers towards CWS and the SROM was able to detect a positive change in peer attitude ratings on the SROM in the

experimental group. This result did not, however, confirm the effectiveness of the CCR as an intervention since the sample size was too small; the focus is therefore directed to the ability of the SROM to detect a change.

There are no set rules to follow to determine validity (Kind et al., 2007). According to McDowell (2006) construct validity is an ongoing process and cannot be proven definitely; it should rather be seen as a continuous process of testing which informs understanding of the constructs that lead to new predictions. Although the SROM was able to indicate changes in peer attitude ratings in the experimental group, one will have to further investigate validity of the scale. In future, other forms of validity would have to be considered, for example validating the SROM against another form of outcomes measure. Longer-term considerations could include development of additional measures such as qualitative feedback on attitude changes to confirm the validity of the SROM results.

To provide early evidence of the reliability of the SROM, internal consistency and test-retest reliability were investigated. The overall internal consistency of the SROM (.94) was similar to that of the .97 of the PATCS (Langevin, 2009). The scores were higher than the recommended 0.70 for group comparisons and higher than the suggested 0.90 for individuals (Nunnally & Bernstein, 1994). When high overall Cronbach Alpha scores are obtained researchers often do not calculate the internal consistency of the subscales, but this should be considered (Chong, 2004) as was done in this study. The scores for PSD and SP were within the recommended range of 0.70–0.90 (Nunnally & Bernstein, 1994). The PSD subscale consisted of more test items in the subscale which might have led to a higher internal consistency than the other two subscales which consisted of fewer items.

The internal consistency for VI was below the range of .70–.90 as recommended by Nunnally & Bernstein (1994). The reason for this low score can be assigned to the small number of items in the subscale that target this construct, as previously seen in other scales with subscales (Çetin, Yaman & Pekker, 2011). Sample size has also been known to influence the estimation of internal consistency (Javali, 2011). A sample size of fifty is, however, proposed as sufficient for calculating internal consistency of five-point scales like the SROM (Javali, 2011). In the current study, the sample size exceeded fifty and might not play such a significant role in the internal consistency scores obtained.

The overall test-retest reliability (.84) is similar to the overall score of 0.85 obtained on the PATCS. This score indicated good test-retest reliability of the total scale. Test-retest reliability was also considered for the three subscales of the SROM: PSD was within the recommended range for correlations but SP and VI were below the recommended 0.75. The reason for this may be that there were fewer items in these subscales than in PSD which influenced the score. A similar trend was

found when the test-retest reliability of the PATCS (Langevin & Hagler, 2004) was investigated. The SP and VI subscales had .66 and .70 test-retest coefficients respectively on the PATCS indicating that they are below the recommended range (Langevin et al., 2009). Scales where the subscales do not always meet the recommended ranges, but have an overall reliability score, can still be considered to have acceptable levels of reliability (Çetin et al., 2011).

The reliability of rating scales has been widely discussed in literature. Matson and Wilkins (2009) conducted a study on forty-eight scales in order to identify difficulties in social skills. Many of these scales met the requirements for internal consistency and test-retest reliability when the overall scores were used, but did not meet the set criteria for the subscales as was the case with the SROM. The List of Social Situation Problems (LSSP) is a self-administered scale for children from 6 to 12 years. The overall internal consistency and test-retest reliability was 0.90 and 0.86 respectively. When the subscales (factors) were considered, these scores dropped to 0.58–0.79 for internal consistency and 0.55–0.74 for test-retest reliability (Matson & Wilkins, 2009). The same trend was observed in the Matson Evaluation of Social Skills in Youngsters (MESSY) which is a 5-point Likert scale to rate social behaviours. The internal consistency and test-retest reliability was within the recommended range for the overall scale but below it for the subscales (factors) with internal consistency between 0.54 and 0.89 and test-retest reliability between 0.49 and 0.80 (Matson & Wilkins, 2009).

Possible reasons for reduced internal consistency on a rating scale can be the small number of items used or the multidimensionality of the scale (Fialko et al., 2008). This is true for the SROM since it explores three different constructs in its subtests and the subtests with the least items (SP and VI) have the lowest reliability scores. Fialko et al. (2008) argued that although the internal consistency of the scale they used can be improved by adding more items, it is questionable if it will improve the measure and it might compromise the simple format. This is also true for the SROM since the number of items was reduced to decrease administration time and have a quick and simple structure. Langevin (2009) stated that it is not uncommon for subscales to have lower test-retest reliability than the overall scale. Langevin (2009) commented that test-retest reliabilities of the total PATCS, as well as the subscales, are within the range of other measures, found to be acceptable to measure peer attitudes towards children with disabilities, even though they don't all meet the levels of test-retest reliability.

It is challenging to develop new outcomes measures, and poor psychometric qualities have been assigned to attitude measures in literature (Kind et al., 2007). It is not a simple process to provide evidence of the validity and reliability of an attitude-rating scale. It seems as if the most widely

acceptable way of establishing evidence is to refer to other measures that already indicate some validity and reliability, as well as using more than one method, while exploring the psychometric qualities. At this stage the SROM is the only measure available to do this which has been developed for the South African context; thus there is no other measure locally that can be used to support the results. The SROM was, however, compared to the PATCS (Langevin & Hagler, 2004) from which it was originally developed; this provided some evidence of validity and reliability. Researchers often argue that if a tool with some evidence of validity and reliability is selected, one does not have to consider the validity or reliability of one's own data (Chong, 2004). This is, however, not true since validity and reliability need to be established in context, especially if tools are adapted. The steps taken to establish validity and reliability of the SROM in context yielded initial results that suggest that it is a suitable outcome measure to use in a feasibility study. Better understanding of data collection tools forms part of the rationale for feasibility studies (Thabane et al., 2010). Thus the results presented in this aim contribute to the initial validation of the SROM.

4.4. Summary of Aim One

The above results provided evidence of the validity and reliability of the SROM as an outcomes measure to be used to gauge peer attitudes towards children who stutter, as well as a method of assessing the outcome of intervention linked to this. The researcher acknowledges that all the subscales did not meet the recommended scores for internal consistency and test-retest reliability but this is a common phenomenon reported in literature when using attitude-rating scales. The overall internal consistency and reliability scores were, however, well within the suggested range and can thus still be used as a reliable outcomes measure. The focus of interpretation of results should, however, be on the overall scale and not as much on the subscales. Overall satisfactory results were obtained to indicate the initial validity and reliability of the SROM but additional replicated studies will be needed as part of a process to achieve further validation. The results obtained in Aim Two of the current study can also further inform the validity and reliability of the SROM before a full-scale CRT is conducted.

CHAPTER 5: RESULTS AND DISCUSSION AIM TWO

5.1. Overview of the chapter

The results and discussion of Aim Two are presented in Chapter Five according to the objectives.

5.2. Results

The direction and magnitude of participants' attitude changes after intervention in the overall sample of participants

Firstly, the overall results for the control and experimental groups will be presented. Further analysis of the overall SROM scores follow as well as results on changes in clusters (classes) for the experimental and control groups respectively.

The means and standard deviations in SROM scores are presented for the overall experimental and control groups in Table 2. In the pre-test there was a difference of 1.92 in means between the experimental ($n=86$) and the control group ($n=110$) with the experimental group starting out with a higher mean. The control group SROM scores during the pre-test presented a minimum of 50 and a maximum of 100 ($M = 75.20$, $SD = 11.90$). The post-test scores indicated 47 as minimum and 100 as maximum score ($M = 75.39$, $SD = 12.33$). The pre-test results for the intervention group ranged from 45 to 97 ($M = 77.12$, $SD = 9.30$). The post-test results ranged from 42 to 100 ($M = 79.29$, $SD = 9.94$). There was a variation in SROM scores from negative to positive, although the overall means indicated more positive SROM scores.

Table 2

Means and Standard deviations for Experimental and Control group on SROM

Pre-Test	N	Mean	Std Err.	Std Dev.	[95% Conf. Interval]
Experimental group	86	77.12	1.00	9.30	75.12 - 79.11
Control group	110	75.20	1.13	11.90	72.95 - 77.45
Post-Test	N	Mean	Std Err.	Std Dev.	[95% Conf. Interval]
Experimental group	86	79.29	1.07	9.94	77.16 - 81.42
Control group	110	75.39	1.18	12.33	73.06 - 77.72

There was a significant difference in mean scores between pre- and post-test in the experimental group, $t(85) = 2.61$, $p=.005$. There was no significant difference in mean scores from pre- to post-test

in the control group, $t(109) = 0.22$, $p=.41$. These results demonstrate improvement in SROM scores and thus a positive shift in the experimental group but none in the control group, suggesting that the change can be attributed to the intervention (CCR).

As part of the analysis of SROM score changes in the overall sample, changes were not only calculated in the experimental and control groups but also for clusters (which were represented by classes) within them. More detail on the cluster comparison in the control group (Figure I1) and the experimental group (Figure I2) is provided in Appendix I.

Clusters in the control group were each compared to cluster 1 in a GEE population-averaged model. Cluster 3 had the lowest value compared to Cluster 1, but this was only at the 10% level and not at the strict 5% level ($p=.09$). The remaining clusters were not significantly different from Cluster 1 since p -values ranged from .49 to .59. The changes from pre- to post-test are not significant ($p=.83$) for the control groups if all else is kept constant. This indicates that although there was variation between these clusters, none of these shifts, negative or positive, were significant. This indicates that the clusters behaved similarly if the pre- and post-test scores are compared i.e. there is no interaction effect.

A GEE population-averaged model was used to analyse the results for experimental clusters. The results indicate there was a significant change ($p=.01$) from pre- to post-test in the experimental groups if all else is kept constant. As was done for the control groups, the experimental clusters were compared to Cluster 1 in this model. The clusters followed the same trend in shifting positively from pre- to post-test and there was no interaction-effect. The comparison of the SROM changes from pre- to post-test for the experimental and control groups is represented in Figure 2.

Figure 2. Changes in SROM scores from pre- to post-test for experimental and control groups

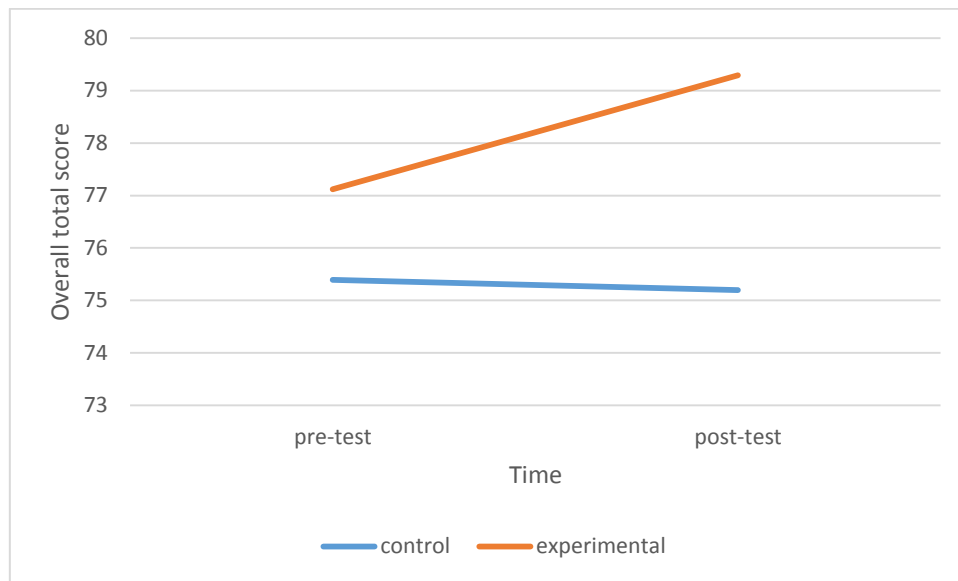


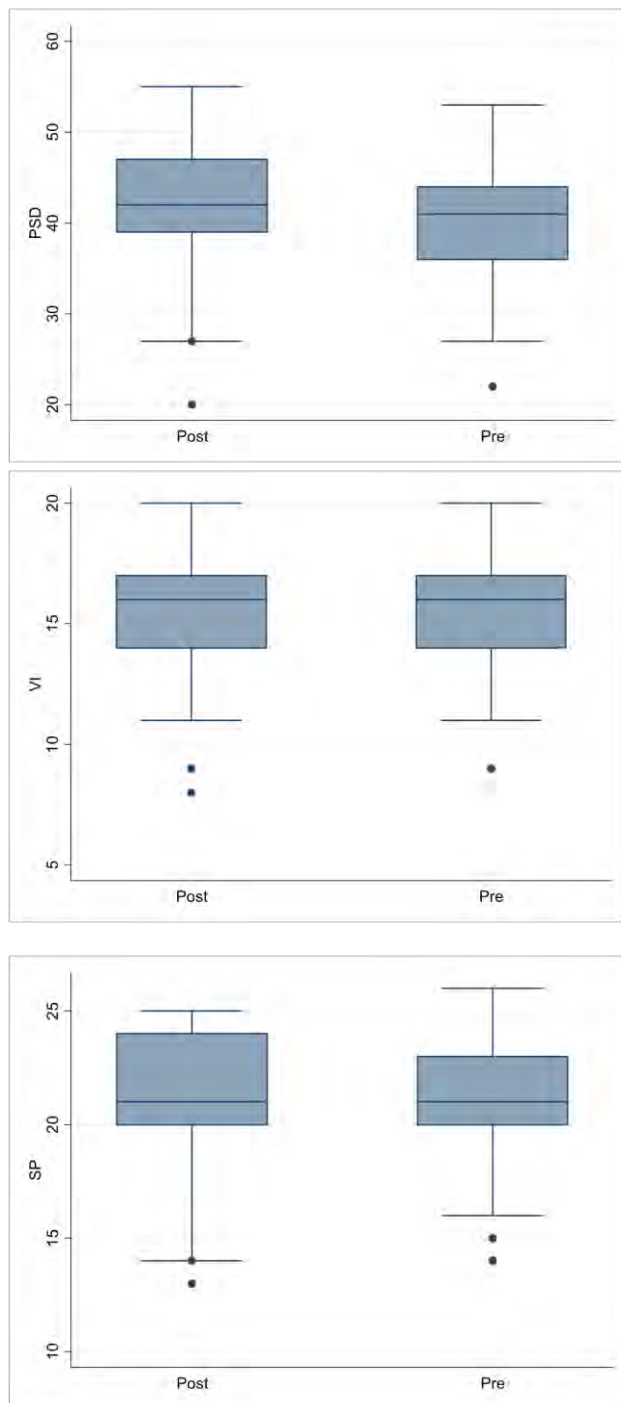
Figure 2 shows that there was no interaction between the clusters of the control and experimental group. There were small variations within the clusters in the experimental and control groups (Figure I1 and I2 in Appendix I) when an intra-cluster comparison was done. However, the overall trends in magnitude of change in SROM scores, or lack thereof, as well as the positive direction of change, were the same between clusters within these groups. This concludes that there was a significant change in SROM scores in the experimental group, but none in the control group.

Attitude changes, or lack thereof, related to specific constructs and individual items on the SROM

Objective (b) was to determine if the attitude changes, or lack thereof, were related to specific constructs and associated items on the SROM. Changes in scores on the SROM subscales and individual items for the experimental group indicated that there was variance in the magnitude of change for the three subscales. These changes are represented in the boxplots in Figure 3. There was a positive shift in both the mean and interquartile range (IQR) for the PSD subscale, with a significant difference between the pre- and post-test scores, $t(85) = -3.96$, $p=.000$. The results indicated that there was no difference between the pre- and post-median values of the VI construct for the intervention group, $Z = 0.000$, $p=1$. A positive shift in the IQR was reported for the SP subscale; however, this was not significant.

Refer to Table J1 in Appendix J for medians and IQR. Medians and IQR were represented as these results allowed comparison between the three subtests since T-test could not be conducted on the VI and SP subscale data.

Figure 3. Boxplots pre-and post-test results of three constructs



The shifts in SROM scores were also investigated by observing the changes in individual items on the SROM. The results that were of most interest are the three items that presented with the most magnitude in change, and the three that indicated no, or the least, shift as indicated in Table 3. Individual items on a scale are not generally investigated in a CRT but it was of interest in this feasibility study to understand the SROM as an outcome measure and to determine if there are

constructs that are resistant to the change the CCR hopes to bring about. A score of 5 indicated the most positive attitude rating and 0 the least positive.

Table 3

Items on the SROM that indicated most and least change in attitude ratings

SROM item	Subscale	Pre-test mean	Post-test mean	Difference in mean
Items that presented with the most change				
Q1: I would like having a child who stutters live next door to me	PSD	3.07	3.64	0.57
Q12: I would like a child who stutters to talk for my group in class.	PSD	2.59	3	0.41
Q18: I would like having a child who stutters in my class.	PSD	3.85	4.06	0.21
Items that presented with the least change in higher range of scores				
Q4: I would be ashamed to be seen with a child who stutters.	SP	4.41	4.29	-0.12
Q19: Children who stutter should not play games that involve talking.	VI	4	4.06	-0.1
Q17: I would be embarrassed to be with a child who stutters.	VI	4.33	4.33	0
Items that presented with the least change in middle range of scores				
Q11: I would be frustrated listening to a child who stutters.	VI	3.56	3.59	0.03
Q13: Listening to a child who stutters would annoy me.	VI	3.86	3.92	0.06

The three items that indicated the most change were all within the PSD subscale. These three items were scored in the lower range before intervention, which can be one of the reasons why they presented with the biggest shift. The three items that indicated the least change in SROM scores were within the SP subscale (1) and two from the VI subscale. These items were already within the

higher range of scores pre-test. One should, however, note that these items on VI and SP subscales started out with the highest means on the SROM and there was little room for improvement on scores. This could be one of the reasons for the little change in these items since a mean score out of 5 would indicate the maximum SROM score per individual item.

It was of interest to examine the two items that presented with the least positive shift in SROM scores in the middle range of scores. This indicates that these items had room to improve but appeared resistant. Both the items were from the VI subscale and are related to listening to a CWS. It could be that this attitude is difficult to alter and not responding as well to the intervention as other constructs.

Changes in attitude, or lack thereof, related to gender or exposure to someone who stutters

- Gender

Males presented with a mean of 77.72 (range 45–94) on the SROM during the pre-test phase, compared to females who presented with a mean of 76.62 (range 64–97). The post-test means for males was 79.31 (range 42–95) and 79.28 (53–100) for females. Refer to Table J2 in Appendix J for detail on means and standard deviations. These results indicate a change for both males and females. A significant change was however only reported in females, $t(46) = 2.90$, $p=0.002$, and not for males, $t(38) = 1.08$, $p=0.14$. These changes are indicated in the boxplots in Figure 4.

Figure 4. Gender comparison for pre- and post-test SROM scores

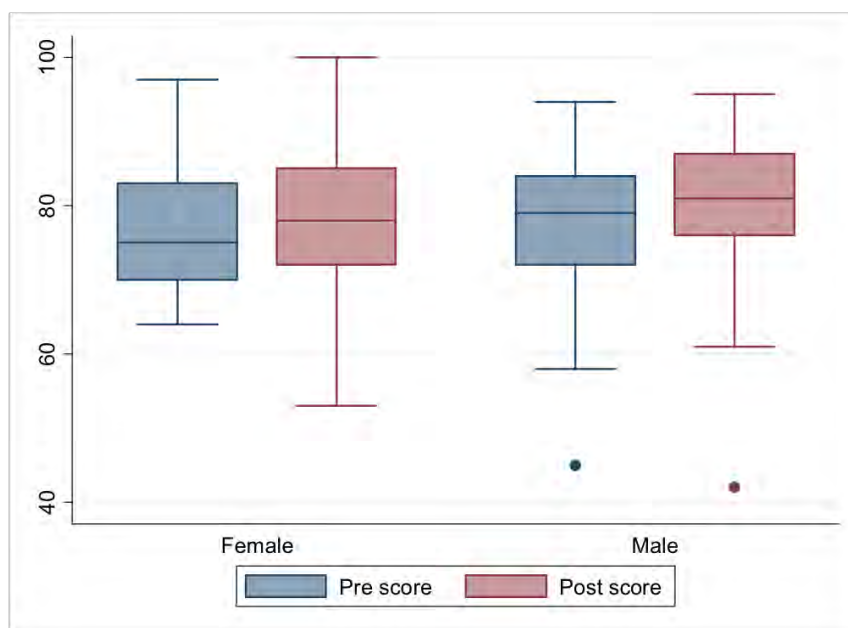


Figure 4 indicated that some females presented with a more negative score at post-test. This was an unusual trend in outliers since the majority of the group presented with a positive shift in SROM scores.

- **Exposure to someone who stutters**

Table 4 indicates that both the control group and experimental group had exposure to persons who stutter. The experimental group had more exposure and also closer relationships to the person who stutters.

Table 4

Exposure to a person who stutters

Group	Close relationship			Acquaintances	
	Family	Friends	Same class	Same school	Community
Control group	16	24	0	11	18
Experimental group	11	34	28	15	7

Participants in the experimental group were divided into groups who had exposure to someone who stutters and those who did not. The experimental group data was used since it was the group that received the intervention and showed a change in attitudes. The means and standard deviations from pre- and post-test were calculated and are presented in Table 5.

Table 5

Means and Standard Deviations for exposure to someone who stutters

Pre-Test	N	Mean	Std Err.	Std Dev.	[95% Conf. Interval]
No Exposure	11	73.27	2.29	7.59	68.17 - 78.37
Exposure	75	77.68	1.09	9.43	75.51 - 79.85
Post-Test	N	Mean	Std Err.	Std Dev.	[95% Conf. Interval]
No Exposure	11	79.18	2.28	7.57	74.09 - 84.27
Exposure	75	79.31	1.19	10.28	76.94 - 81.67

The participants who had no exposure to someone who stutters presented with a lower mean in the pre-test ($M=73.27$) compared to the group who had exposure to someone who stutters ($M=77.68$). paired t-tests were conducted and the results indicated that there were significant positive shifts from pre- to post-test in both groups. The change was of greater magnitude for the group who had no exposure, $t(10)= 2.98, p=.007$, compared to the group who had exposure, $t(74)= 1.81, p=.03$.

5.3. Discussion

- Participants' attitude changes after intervention in the overall sample

When comparing the differences in means from pre- to post-test for the experimental and control groups, the magnitude of change in the positive direction is larger in the experimental group after one month; this was confirmed by inferential statistics. This research design was specifically selected to observe if the intervention led to changes in SROM scores in participants since this would be indicative of more positive attitude ratings toward CWS. Pretest-posttest designs have been used before to successfully determine the treatment effect of interventions linked to negative peer attitudes (Edwards et al., 2005; Langevin & Prasad, 2012; Stevens et al., 2000). The experimental group continued to present with a positive shift in attitude ratings even though the group started out with more positive attitudes than the control group. The changes over one month in the experimental group can be linked to the CCR since the control groups did not present with any shifts and did not receive any intervention. The results indicated potential benefit of the CCR as an intervention in this feasibility study. The importance of the inclusion of a control group in the research design is also flagged, since more reliable conclusions can be made regarding the changes in the experimental group.

In addition, the SROM was able to detect differences between the experimental and control group. This further builds on its validity as an outcome measure for future research since establishing validity is a continuous process (McDowell, 2006). The SROM was able to detect a positive shift in attitudes in the experimental group to evaluate school-based stuttering interventions, similar to the PATCS from which it was developed (Langevin & Prasad, 2012). Although the magnitude of this shift was small, it was a positive outcome for this feasibility study since it indicated the potential positive treatment effect of the CCR, and the ability of the SROM to detect this change in attitude.

One should consider that the post-test measurement was obtained one month after intervention. The small changes in attitudes that were observed during this study might only reflect the initial treatment effect and increase further over time. This was supported by Edwards et al. (2005) who stated that attitudinal changes after intervention might take time and longitudinal studies are needed to investigate this further.

There were no major differences between the minimum and maximum values on the SROM for both the pre- and post-test for the control as well as the experimental groups. This indicated that all groups included participants with varying attitudes towards CWS. The similarities in the range of scores between the experimental and control group strengthened the assumption that the groups were not vastly different from each other, which in turn would result in more reliable results when comparing these groups. Although the intervention group had a higher mean ($M=77.12$) during the pre-test than the control group ($M=75.20$) the lowest SROM score was still similar in both groups. Although the overall attitude ratings were generally positive, the range also indicated that there were learners with negative attitudes. This could point to an equal need for intervention in both groups. The differences at pre-test are also a result of the research design selected. Differences in group features at pre-test resulted from chance and not systematic bias when clusters are randomly assigned, which is one of the benefits of a CRT design (Campbell et al., 2012). The randomization in this study indicated a strength of the design since it prevents bias.

Stevens et al. (2000) also found differences in baseline measures when comparing experimental and control groups in a pretest-posttest design. High baseline measures led to less treatment effect being observed. Although these limitations were present in the study, a positive treatment effect of the programme could still be observed (Stevens et al., 2000). These methodological limitations point out that measuring changes in schools often lead to challenges and the design might not be as strong as intended (Stevens, et al., 2000). Even with these limitations, intervention studies still add crucial information to the field of school-based intervention programmes against bullying (Stevens et al., 2000). The same argument can be made that, although there were differences in baseline scores for experimental and control group during pre-test, the results still indicate the effectiveness of school-based interventions like the CCR.

The overall mean SROM scores were high in the experimental and control groups signalling more positive attitudes in the group as a whole, even though outliers with negative attitudes were present in both groups. It would be difficult to only target learners with negative attitudes within a group intervention, and one should also not discard the potential benefit of shifting the already existing positive attitudes of learners even higher. Participants with positive attitudes toward CWS could still benefit from intervention to raise their awareness about stuttering and further improve their attitudes. The learners with positive attitudes can also impact the ones with negative attitudes in their classes during the class discussions. Most bullying intervention programmes follow a group approach rather than individual treatment since this was found to be more efficient and cost effective to bring about change in schools (Bell et al., 2010). Another linked South African study has also found that the overall score at pre-test was generally positive for experimental and control

groups (de Grass et al., 2010). This might indicate that local learners already have some appreciation of difference and, in addition, have had high levels of exposure to persons who stutter in their daily environment. There is still a need to improve the negative attitudes of individuals in the classroom setting as well as to further shift already positive attitudes. Kathard et al. (2014) implemented the CCR in lower quintile schools and used the SROM as an outcomes measure. The study indicated a positive shift in attitudes but greater shifts were found in the current study. Although the positive shifts differed in magnitude, there is still positive treatment effect across quintiles which would strengthen the case for a full scale CRT.

In RCTs participants are usually randomly assigned to experimental and control groups. This was not possible in this study since participants were already in predetermined clusters and, as the intervention was implemented in classes, a CRT was more suitable. An analysis of the different clusters was conducted as part of the overall results to determine the variation, if any, between them. Data from feasibility studies is often used to determine sample size in future studies (Thabane et al., 2010). It is important to consider the cluster effect in this feasibility study since this will have implications for the sample size calculation in larger CRTs. Previous data was not available in South Africa and this can now be used to plan and increase the likelihood of success for a future CRT.

The intra-cluster analysis indicated small variations in the experimental and control groups but the overall trends in these groups were the same for clusters. Clusters within the same school also varied so it did not appear that school culture led to uniform clusters. These slight variations could potentially be influenced by other variables and might include exposure to someone who stutters as well as the attributes of the teacher who implemented the resource. Variations in clusters could not be controlled and the most important consideration would be on how this will be taken into account during sample size calculation for a larger CRT study. Data from the current study will need further analysis to determine the cluster effect and how it will influence the sample size calculation in a future CRT. The data from this current study can help to inform sample size of future studies. Sample sizes need to be increased to take the clustering effect into account (Campbell, et al., 2012).

In this study only inter-cluster comparison was conducted to determine if there was interaction between the clusters, however, intra-cluster comparisons should be considered for future CRTs, e.g. when determining sample size. This can be used in future for sample-size estimates, e.g. through evaluations of intra-cluster correlation coefficients (Campbell et al., 2000), before a larger CRT is undertaken. The data from this feasibility study will be of value in future during the process of sample-size calculation. Data from other studies will also have to be considered for future CRTs. A study focusing on the less resourced, lower quintile schools indicated that the positive shifts in

attitudes were less when compared to higher quintile schools (Kathard et al., 2014; Badroodien, 2015). The positive treatment effect might be larger in more resourced schools and a sample size that includes a range of quintiles should be incorporated in a future CRT.

- **Attitude changes related to specific constructs and individual items on the SROM**

The PSD subscale indicated the largest magnitude of shift in attitude when compared to the other subscales. Verbal Interaction subscale exhibited no major change after intervention, while the SP subscale presented with a positive, but not statistically significant, shift in attitudes after intervention. The PSD subscale, which relates to the construct of social distance, indicated how accepting one is of others, with specific reference to members of the in-group and out-group (Langevin et al., 2009). The CCR raised awareness of stuttering and focused on the celebration of diversity. It could possibly have broken down some perceptions around what places members in the in- or out-groups and that in turn led to the reported positive shifts in peer-attitude ratings. Taking into consideration that these results were obtained one month after intervention, there might be further improvements over time. The PSD construct might be the one most responsive to change in the short term but additional changes in attitudes over a longer period will need future investigation. Longitudinal studies are needed to investigate attitude changes after the implementation of stuttering interventions (Flynn & St. Louis, 2011).

The three items that indicated the least change in SROM scores all started out on a high level, which left little room for improvement. These items were related to being seen with a child who stutters, which does not seem to elicit negative peer attitudes during the pre-test. Being seen with a child who stutters does not seem to be perceived as negative as other interactions with CWS. Two other items of interest were added to the analysis of individual items; these were both in the middle range of SROM scores but showed minimal positive shift when compared to other items. The items were both from the VI subscale and related to frustration while listening to a child who stutters (Langevin et al, 2009). The SROM scores for these items were not easily changed by the CCR after one month. A possible reason for this might be that attitudes linked to verbal interaction and frustration during communication elicits more negative attitudes than merely being seen with a child who stutters. These more negative attitudes might take longer to change. Consideration should be given to how this construct is addressed during future intervention to improve the outcomes.

- **Attitude changes influenced by gender**

Males presented with more negative attitudes when the minimum and maximum SROM scores were analysed. They had the lowest SROM scores during both the pre- and post-test when compared to females. They also did not obtain the same level of maximum scores on the SROM as females for

either the pre- or post-test. This could indicate that males generally held more negative attitudes towards CWS and were not as responsive to the intervention as females. In general, females hold more positive attitudes towards children with disabilities (Bossaert, Colpin, Piji & Petry, 2011; Reina, Lopez, Jimenez, Garcias-Calvo & Hutzler, 2011). One should consider how intervention is provided to address these differences. Providing intervention in mixed-gender classes where females with more positive attitudes can potentially influence males with more negative attitudes can be one consideration.

International studies have found males to have more negative attitudes specifically towards CWS than females (Dietrich et al, 2001; Langevin, 2009, Wiesel & Spektor, 1998). Negative attitudes can be linked to bullying so one needs to consider differences in gender linked to bullying too. A WHO bullying survey in the USA found that 53% of males and 37% of females were involved in bullying (Nansel et al., 2001). If a larger portion of males hold negative attitudes and are involved in bullying when compared to females, it might make it more difficult to alter their attitudes and would need to be considered in future research. There was an unexpected phenomenon of some outlying females showing a decrease in attitudes after intervention. It is uncertain what may have caused the behaviour of these outliers and this will in future have to be investigated for similar trends and reasons. These changes were recorded one month after intervention and future studies should consider if these changes are maintained over a longer period, and whether there are further shifts in attitude over time.

When the mean pre-test scores of the SROM were compared, males started out on a higher level than females, which masked the negative outliers discussed above. We can, however, infer that not all males hold negative attitudes towards CWS; both groups indicated a positive shift in attitudes from the pre- to post-test, but the magnitude of the shift was significant for females. Females proved to be more responsive to the intervention and indicated the larger shift in attitude towards CWS. If one considers these findings, it indicates benefit for both genders to participate in the intervention. This supports the decision to implement the CCR in mixed-gender classes. This study was conducted in mixed-gender, higher-quintile schools in Cape Town to investigate the variable of gender. In Cape Town, most of the well-resourced schools in the higher quintiles are single-sex schools. While these schools were not included in the current study, this will have to be considered in a future CRT to determine if learners in those classes would react differently to the CCR.

- **Attitude changes influenced by having exposure to someone who stutters**

The final variable considered in this study was whether having exposure to a person who stutters would have an impact on attitude ratings. The majority of participants in both the control (63%) and

experimental (87%) groups had been exposed to someone who stutters. The exposure ranged from acquaintances, for example someone who shared transport, to closer relationships, for instance friends and family members. It was important to consider how many participants had exposure to someone who stutters since this might influence attitudes towards stuttering as well as the outcomes of the intervention.

The experimental group had greater exposure to someone who stutters and started out with more positive SROM scores. This trend is supported by different studies in Canada indicating that a child who knows a person who stutters will have fewer negative attitudes towards their peers who stutter (Langevin, 2009; Langevin et al., 2009). Both groups, with and without exposure, showed a positive shift in attitudes from pre- to post-test. The group who did not have exposure to someone who stutters, however, presented with a larger magnitude in positive shift, suggesting that the intervention had a greater impact on this group. This was supported by Langevin & Prasad (2012) who found that participants, who did not have exposure to someone who stutters, changed their attitudes more after intervention in comparison to participants who had exposure to someone who stutters. Raising awareness about stuttering can therefore lead to more positive attitudes towards CWS. The group who did not have exposure showed a positive shift in their attitudes after the intervention and one could argue that their awareness level was raised by the CCR. There is, however, still value in implementing the intervention in a group that includes participants with and without exposure since both groups' attitudes shifted positively. Learners with more exposure and positive attitudes could potentially influence other learners' attitudes by sharing their experiences in class discussions. This finding strengthened the rationale for continuing to implement the CCR as a group intervention in a future CRT and not only to peers who did not have previous exposure to someone who stutters.

It is not clear at this stage of the study if the proximity, close relationship, or a mere acquaintance, to the person who stutters plays a role. McManus, Feyes and Saucier (2010) investigated attitudes towards individuals with intellectual disabilities and the result indicated that more knowledge and contact did not affect attitudes but having quality of exposure led to more positive attitudes (McManus et al., 2010). One could argue that a closer relationship would raise more awareness of stuttering and associated positive attitudes, but this will have to be established in future studies. Exposure, along with intervention, can be an additional advantage to improve attitudes towards CWS. These issues regarding the type of exposure that were raised from the results of this feasibility study will have to be taken into account when implementing a larger CRT study.

5.4. Summary of Aim Two

This study served as a feasibility study to observe the potential treatment effect of an intervention to improve peer attitudes towards learners who stutter - the CCR - and to identify key aspects to consider before conducting a full scale CRT. The CCR yielded promising results by leading to small shifts in a positive direction in peer attitudes after the intervention when compared to control groups after one month. The initial treatment potential of the CCR suggests that a larger scale CRT is feasible.

There was slight variation in changes of attitude between clusters but none were significant. The clustering effect will need further investigation when calculating the sample size for a full scale CRT and should inform the recruitment process. Both male and female SROM scores improved after intervention but the magnitude of the positive shift was higher for females. Participants, who had exposure to someone who stutters, as well as those who did not, both indicated a positive shift in SROM scores after intervention but the magnitude of the shift was greater for the group without exposure. It can be concluded that participants in clusters would range in their attitude towards CWS for various reasons but all showed a positive shift in attitudes, albeit in varying degrees.

Both males and females responded differently to the intervention but both benefitted by improving attitudes toward CWS. This result provided a rationale to continue with the intervention as it stands for both genders, for it to be implemented in a class setting, and not alter it in order to target isolated groups or individuals. This is a time- and cost-effective way of raising awareness of stuttering and improving peer attitudes towards CWS. As an additional benefit, teachers can be empowered to manage the CWS in the classroom, and associated teasing and bullying, within the school setting and SLTs can manage the CWS more holistically in their environment.

A larger CRT will, however, be needed to establish the effectiveness of the CCR, since at this stage it is only showing potential treatment benefit after one month in the higher quintile schools. Consideration should be given to how attitudes will be affected over a longer period of time, as well as how to broaden the scope to include all the quintiles in one study.

5.5. Conclusion of study

The CCR was developed to meet the needs of a contextually-relevant classroom-based intervention to improve peer attitudes towards CWS and to reduce bullying. The effectiveness of interventions, however, need to be determined as part of EBP. The SROM was developed to be used as an outcomes-measure to determine peer attitudes towards CWS. This study indicated evidence of the

validity and reliability of the SROM as an outcomes measure. The CCR demonstrated initial positive treatment effect in this feasibility study. Males presented with more negative attitudes when the lowest SROM scores were considered. Exposure to someone who stutters led to more positive attitudes at pre-test and the change after intervention was larger for the group who did not have previous exposure to someone who stutters. These results indicate that the CCR can potentially improve peer attitudes towards CWS and supports the feasibility of undertaking of a full scale CRT.

5.6. Strengths and Limitations of study

One of the most important strengths of this study was the development of an outcomes-measure and the investigation of the outcomes of an intervention programme to raise awareness of stuttering and to reduce teasing and bullying in the South African context. There are similar tools and resources available internationally but none have been developed locally and neither has research been conducted on this topic. Preliminary evidence was obtained to indicate the validity and reliability of the SROM as an outcomes-measure to develop in future research. In addition, the CCR was showing potential treatment benefits to provide a rationale for a larger scale CRT for further investigation. The preliminary results were positive and can potentially empower teachers on how to raise awareness of stuttering, how to manage negative attitudes towards CWS, and also to limit the impact which it has on the CWS.

Although the outcomes of the intervention were potentially positive, a larger scale CRT will be needed to draw conclusions on the effectiveness of the CCR. As a feasibility study it has, however, fulfilled its purpose and the results will be valuable in planning a full-scale CRT. The research design was found to be a strength and suitable for this study, since the participants were in pre-determined classes to receive intervention, and the inclusion of a control group allowed the researcher to investigate changes. The one-month period after intervention would have to be increased in future studies since changes might occur over a longer period and to determine whether change is maintained.

There are, however, limitations to the current study: not all potential participants could be included due to difficulty in obtaining parental consent within the school setting. Ways to improve on this process will have to be considered if a larger study is attempted.

5.7. Implications for further research

This study yielded valuable results which can be used in future research and since it was a feasibility study, it hopes to inform a larger CRT. In conducting the CRT one would have to consider the fact

that the learners are in predetermined clusters and the cluster effect will have to be taken in account when calculating the sample size. Learners indicated varying degrees of positive shifts in attitude, which flags the importance of group intervention rather than isolating individuals. Future studies should still include males and females, as well as learners who had exposure to someone who stutters and those who did not. This study only focused on the higher quintile and the full range of quintiles should be included in a larger study to observe outcomes in a sample which better represents the full population.

Future research can consider whether changes in attitudes were sustained or changed over time, since this study only looked at changes one month after intervention. This will be of value since the CCR is a single-dose intervention and it is uncertain whether it would have a lasting impact similar to the more intensive interventions. This study only focused on stuttering as a communication disorder and associated teasing and bullying. Future studies can consider the broader application of the CCR in raising awareness around disability in order to foster acceptance. This will be of great value in the South African school system of inclusive education where many children with disabilities attend mainstream schools and experience teasing and bullying.

Lastly, it remains unclear if the positive changes in attitude that were brought about by the CCR would translate into behaviour. The question of whether more positive attitudes towards peers would lead to less teasing and bullying remains unanswered at this stage.

5.8. Implications for clinical practice

The implication for clinical practice is of great importance since there has been a call internationally to evaluate the effectiveness of interventions we - as SLTs - use to manage the CWS. The preliminary results indicate that the CCR can bring about a positive shift in peer attitudes towards CWS. Initially the results of this study will raise awareness amongst SLTs about the environmental impact of stuttering on the CWS within an ICF framework, and how they need to consider this when planning intervention. The CCR would be a valuable resource for SLTs to have in partnering with teachers of CWS to manage negative attitudes and associated teasing and bullying. SLTs often lack the time or resources to implement classroom interventions but this study can raise the awareness that classroom intervention should form part of the intervention toolkit for CWS, even if the therapist is not the one implementing it. This can potentially lead to improved inter-disciplinary teamwork between therapists and teachers in managing the CWS. This is also relevant for therapists not working in the education domain but rather in the private sector or governmental health institutions.

Lastly, the CWS will benefit from peers being educated about stuttering and it will potentially reduce teasing and bullying. A full-scale CRT is, however, needed to establish the effectiveness of the CCR but positive feasibility results provide preliminary evidence of the treatment benefit of the CCR and a sound rationale for further investigation in a larger study.

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APPENDIX A: CLASSROOM COMMUNICATION RESOURCE

This resource was specifically designed for teachers in the South African context. Research has indicated that teachers are often faced with children that have communication disorders, like stuttering, in their class rooms. Teachers have indicated that they are unsure how to manage these learners in their class rooms as well as how to address associated bullying that might occur.

This resource aims to give teachers information about stuttering. Included you will find practical guidelines on how to manage the learner who stutters in the class room. The second half of the resource consists of classroom activities that aim to raise awareness of stuttering amongst Grade 7 learners.

What causes stuttering?

Stuttering can be influenced by genetics and often run in families. Stuttering is the result of interaction between physical composition and the environment. A child will not begin to stutter by copying someone that stutters.

It usually begins in the time that children develop most of their language (age 2 – 5 years). In most cases more boys are affected than girls. Stuttering can often become more severe if the child is excited or nervous.

What does stuttering sound like?

Stuttering can present in different ways. Not all of these behaviours need to be present for a child to be diagnosed with stuttering.

- Repeating whole words: “The the the”
- Repeating parts of words: “mo- mo- mommy”
- Prolonging sounds: “nnnnno”
- Silent blocks: getting stuck on a word or not getting the word out

What can I do as a teacher?

As a teacher there are guidelines you can follow when interacting with the child. Some of the following behaviours are often observed.

- Avoid reacting to the child’s stuttering in a negative way, e.g. “Stop stuttering” or “Try and say that properly”.

- Try not to give advice about how not to stutter, e.g. “First think about what you want to say before you speak.” Or “Take a breath before you start again.”
- Limit any negative body language when the child stutters, e.g. frowning or looking away.
- Try not to ignore the child’s difficulty, e.g. pretending that it is not happening when he expressed difficulty.

Suggestions:

- Listen to the child and give them enough time to communicate their ideas.
- Be patient and reflect an attitude of acceptance for their difficulties.
- Try not to draw attention to how the child speaks as we want them to feel that it is easy to speak.
- Children become more anxious if they pick up on negative body language. Try to patiently look at learner as they are communicating with you.
- If the child expresses concern about their difficulty it is best to communicate acceptance

Guidelines to Educator on how to use the CCR

Please do not do any other activities once we have left the room to educate the learners about stuttering, diversity or difference because we won’t know if it was our resource or your other activity which changed the children’s attitudes.

If the learners ask questions once we are gone, it would be best if you give as brief an answer as possible and get them to write the question down. When we come back next week we can follow that question through with the learners.

Three years ago a Classroom Communication Resource (or the CCR) was developed by some UCT students for the South African context. It was designed to change attitudes of children towards other learners who stutter and to be more tolerant of communication diversity. We are currently doing a study to see how effective this Resource is in the hope that it will be widely distributed and beneficial to many educators and learners.

We would like you to familiarize yourself with the resource before our next visit, just to read through it. Because this is a study we would appreciate it if you could administer the resource as it is and not

make any changes. However, when you use it again in the future you are more than welcome to adapt it and change as you see fit.

There are three parts to the resource. The first is a social story. For this part, you must have the learners seated and read the story out loud to them. Allow children to do role play and others to watch.

The instructions for the last part, which is a brain storming session and a discussion, are clearly outlined in the resource. It would be best for our results if you could stick as closely possible to these guidelines. If the discussion happens to go off track, you should try to bring it back to the outline. Please only do the resource when we are here to observe. After that we will be doing the questionnaire again.

Social Story: The Band of Difference

“Attention School: a talent competition will be held next Friday,” announced Mrs Smart, the school principal. “Anybody is welcome to perform, so all interested learners please sign up soon.” This was the announcement that led to the success of the Band of Differents.

What is this Band of Differents, you ask? Well, let us meet the band: Thabo plays the tambourine, Lilly plays bass guitar. Rajesh plays the lead guitar. Little Thandi controls the drums and Marsha rocks the keyboard.

Thabo, also known as “Tubs”, leads the band. He founded the group a year or two ago while on a school outing. It was the yearly hike and two hours into the hike, this particular group of people found themselves in a bit of a pickle... They were lost on the mountain. Bored, concerned and hungry, music-making became their comfort and joy. That unexpected day on the mountain changed the course of their lives. From that day on, music was the force that drew them together. Ever since then, they meet at Thabo’s house for band practice every weekend.

Tubs is the out-going and charming band-leader, who loves to snack on junk food and show off his afro hairstyle. This does not help his chubby figure, but this certainly helps him jiggle along to the ting of the tambourine.

Lilly is the quiet, shy character that comes from a wealthy family. She is always dressed in the most fashionable clothes on ‘casual’ days at school. Lilly’s passion is playing the guitar but her parents do not support her in this because they want her to focus only on her school work. When Lilly is with the band, she feels she can be herself.

On the outside, Little Thandi appears to be skinny, small and seems insignificant to others. But when given half the chance, her feisty, no-nonsense attitude shines through. This determination makes her the best player on the netball court.

Rajesh is the “genius” child with shaggy dark hair. He is a bit of a day-dreamer because school does not interest him. He prefers to spend his days playing chess and watching documentaries on ‘National Geographic’.

Marsha is the ‘mommy’ of the group. She is the mediator and has a knack for resolving arguments within the group. She loves singing, but she cannot keep a tune. She tends to break into song at any time during practise, disrupting the band’s flow. But no one else can play the keyboard like Marsha can. However, something is missing in the band.

After hearing the school announcement that afternoon, everybody rushed out of class talking about the upcoming event. Even though the band was very excited about the concert, they were in a bit of a dilemma... The band was still incomplete so they couldn't enter the concert yet.

They had previously held auditions to fill this missing gap but nobody had that special something to add to their unique sound.

While walking home from school they heard a funky melody.

"Where is it coming from?" someone shouted. "It's coming from the trees," answered Rajesh.

"Look, it's Peter, the one who talks funny."

Peter was the quiet student in the class, who always got on with his work and got good marks. Most of the time he chose to keep to himself.

That afternoon, Peter decided to climb up his favourite tree, the one with the view of the sea in the distance. Peter would sit in this tree and daydream and sing all day long. It was a place where he could forget all his troubles.

"Wow, Peter, that's an awesome sound you got there. Come down", said Tubs.

He unwillingly climbed down from the tree and stood uncomfortably in front of the group.

"We didn't know that you could sing so well..." said Lilly. "Why didn't you try out for our band?"

"Well guys, it's obvious...it's because he talks like this – he is a stutterer," said Thandi.

"Just because I stutter doesn't mean I have no other talents", replied Peter while he began to walk away.

Then Marsha piped up: "Hold on guys, my brother also stutters but that hasn't stopped him from being good at sport and having lots of friends – it's not a big deal. He doesn't allow his stutter to stop him from doing what he wants to do."

"Yes, that's true. He even helped me do a presentation on the new environmental society that I am starting up at school," said Rajesh.

"We all have things we can and cannot do well. Like you, Thandi. You are a good netball player and Rajesh is good at chess. But you would not be any good at chess, and Rajesh would not be any good at playing netball," explained Marsha. "And Peter may be better at singing than he is at talking. I think Peter would be great for our band. How about we ask him to join?"

"I do not think so. I do not think he would be good enough to be in our band," Thandi added.

"I think he would be perfect! And his voice is just what we need to complete our band," said Lilly.
"Then we can enter the talent concert!"

The group calls him to come back and they ask him to join their band. Peter was surprised that they would ask him to join. He has always struggled with his speech and this has stopped him from making friends and talking to people. He therefore keeps to himself and tries to avoid talking in class.

Peter was unsure about whether he wanted to join the band, but realised that this was a chance to make some friends and he could show people that just because he stutters, it does not mean that he cannot sing.

A week later, after long hours of practise, the band was ready to take part in the talent concert.

It was finally the night of the concert. As they walked on stage to set up, the band heard whispers coming from the crowd.

"Why is Peter up there?"

"He's the boy who talks funny."

Peter and the band can hear the comments in the background. But they continue to set up the stage. They wait for Thandi to give the drum count to start the first song, but there was no sound. Thandi sat there; not moving. She felt like her body had frozen; she feared the crowd of people before her waiting for her to perform under the blinding lights of the stage. The band did not know that she suffered from stage fright, as they had never performed on stage in front of an audience before. She could hear the band members shouting at her to start playing:

"Thandi! What are you doing? We are ready to start!"

"Thandi, hit the drums!"

"We cannot start without you!"

Just as she was about to run off the stage, Peter begins to sing. The first lines of the song begin to echo throughout the school hall. The people sat silently; amazed. The rest of the band blended in with their instruments and soon enough, Thandi was drumming along too.

The teachers and pupils who knew Peter could not believe that the boy who stutters was the one who could sing so beautifully.

After the competition, the band huddled together in excitement backstage.

“Peter, if you had not started singing, we probably would not have played at all!” Tubs said while munching down on his chocolate bar.

Marsha noticed that Thandi was unusually quiet and withdrawn. Before Marsha had a chance to reassure her, Peter was already by her side.

“I do not know what happened tonight. I have never felt so scared before,” said Thandi.

“But Tttttthandi, in the end, you managed to play and gave a great performance,” said Peter.

“We all have something that we are afraid of. For me; it’ssssss talking, and for you; it’s being on stage in front of an audience,” Peter added.

“But Thandi, you are always so tough, and nothing ever seems to get you down,” Rajesh commented.

“But guys, just because someone seems tough, it does not mean that they cannot ever feel scared” Lilly added.

Peter continued: “You ttttook the first step to overcoming your fear by playing those drums ttttonight and not walking off the stage. For me, being part of your group was difficult because I am a ssttttutterer – I had to face my fear of speaking to other people.

By changing our own negative feelings and reactions toward other people, it opens our eyes to the fact that these differences are actually what make us unique. In the end, this is what gives us character.

“Ok guys, enough talk... I say we celebrate over a round of milkshakes. That performance really took it out of me... I’m starving” said Tubs.

“But hold on a minute! The new National Geographic documentary starts in the next ten minutes.” shouted Rajesh.

“RAJEEEEESH!” they all shouted.

THE END

Role-play: The Band of Differents

Characters: Narrator 1 and Narrator 2, Mrs Smart, Tubs, Lilly, Rajesh, Peter, Thandi and Marsha.

Extras: 3 people in crowd at the talent concert.

Mrs. Smart: Attention School! A talent competition will be held next Friday. Anybody is welcome to perform so all interested learners please sign up soon.

Narrator 1: After hearing the school announcement that afternoon, everybody rushed out of the class talking about the upcoming event. Even though the band was very excited about the concert, they still had a bit of a problem...the band was still incomplete so they couldn't enter the concert yet.

They had previously held auditions to fill this missing gap but nobody had that special something to add to their unique sound.

While walking home from school they heard a funky melody.

Band members (Rajesh, Tubs, Thandi, Lilly and Marsha): Where is it coming from?

Rajesh: It's coming from the trees!

Thandi: Look, its Peter, the one who talks funny.

Narrator 2: Peter was the quite student in the class, who always got on with his work and got good marks. Most of the time he chose to keep to himself.

That afternoon, Peter decided to climb up his favourite tree, the one with the view of the sea in the distance. Peter would sit in this tree and daydream and sing all day long. It was a place where he could forget all his troubles.

Tubs: Wow Peter, that's an awesome sound you got there. Come down!

Narrator 1: He slowly climbed down from the tree and stood uncomfortably in front of the group.

Lilly: We didn't know that you could sing so well. Why didn't you try out for our band?

Thandi: Well guys, it's obvious...it's because he talks llllike thththis – he's a stutterer.

- Peter:** Jjjjjust because I stutter it doesn't mean that I don't have other talents!
- Narrator 1:** Peter began to walk away.
- Marsha:** Hold on guys, my brother also stutters but that hasn't stopped him from being good at sport and having lots of friends – it's not a big deal. He doesn't allow his stutter to stop him from doing what he wants to do.
- Rajesh:** That's true. He even helped me do a presentation on the new environmental society that I am starting up at school.
- Marsha:** We all have things we can and cannot do well. Like you, Thandi. You are a good netball player and Rajesh is good at chess. But you would not be any good at chess, and Rajesh would not be any good at playing netball. And Peter may be better at singing than he is at talking. I think Peter would be great for our band. How about we ask him to join?
- Thandi:** I do not think so. I do not think he would be good enough to be in our band.
- Lilly:** He would be perfect! His voice is just what we need to complete our band. Then we can enter the talent concert!
- Narrator 2:** The group calls him to come back and they ask him to join their band. Peter was surprised that they would ask him to join. He has always struggled with his speech and this has stopped him from making friends and talking to people. He therefore keeps to himself and tries to avoid talking in class.
- Narrator 1:** Peter was unsure about whether he wanted to join the band, but realised that this was a chance to make some friends and he could show people that just because he stutters, it does not mean that he cannot sing.
- A week later, after long hours of practice and lots of hard work, the band was ready to take part in the talent concert.
- It was finally the night of the concert. As they walked on stage to set up, the band heard whispers coming from the crowd.
- Person 1 from crowd:** Why is Peter up there?

Person 2 from crowd: He's the boy who talks funny.

Narrator 2: Peter and the band can hear the comments in the background. But they continue to set up the stage. They wait for Thandi to give the drum count to start the first song, but there was no sound. Thandi sat there, without moving. She felt like her body had frozen. She feared the crowd of people before her waiting for her to perform under the blinding lights of the stage. The band did not know that she suffered from stage fright, as they had never performed on stage in front of an audience before. She could hear the band members shouting at her to start playing:

Tubs: Thandi! What are you doing? We are ready to start!

Rajesh: Thandi, hit the drums!

Lilly: We cannot start without you!

Narrator 1: Just as she was about to run off the stage, Peter begins to sing. The first lines of the song begin to echo throughout the school hall. The people sat silently; amazed. The rest of the band blended in with their instruments and soon enough, Thandi was drumming along too.

The teachers and pupils who knew Peter could not believe that the boy who stutters was the one who could sing so beautifully.

After the competition, the band huddled together in excitement backstage.

Tubs (while munching down on his chocolate bar): Peter, if you had not started singing, we probably would not have played at all!

Narrator 2: Marsha noticed that Thandi was unusually quiet and withdrawn. Before Marsha had a chance to reassure her, Peter was already by her side.

Thandi: I do not know what happened tonight. I have never felt so terrified before.

Peter: But Tttthandi, in the end, you managed to play and gave a great performance.

We all have something that we are afraid of. For me, it'sssss talking, and for you, it's being on stage in front of an audience.

Rajesh: Thandi, you are always so tough, and nothing ever seems to get you down.

Lilly: Guys, just because someone seems tough, it does not mean that they cannot ever feel scared.

Peter: You ttttook the first step to overcoming your fear by playing those drums tonight and not walking off the stage. For me, being part of your group was difficult because I am a sttttutterer – I had to face my fear of speaking to other people.

Narrator 1: By changing our own negative feelings and reactions toward other people, it opens our eyes to the fact that these differences are actually what make us unique. In the end, this is what gives us character.

Tubs: Guys, enough talk already... I say we celebrate over a round of milkshakes. That performance really took it out of me... I'm starving.

Rajesh: But hold on a minute! The new National Geographic documentary starts in the next ten minutes.

All band members (Tubs, Thandi, Lilly, Marsha and Peter): RAJEEESH!

THE END

Class Activity

Brainstorm around the theme of communication:

1. What does communication mean? (Includes talking to people, understanding what other people say and expressing your ideas and feelings).
2. What communication difficulties can people have? (e.g. hearing loss, cleft lip and palate, lisp & reading and writing problems)
3. Which character in the story had a communication difficulty?
4. What was this difficulty?

Activity 1: “In Peter’s Shoes”

Goal: To encourage positive feelings and to explore negative attitudes toward differences amongst peers in the classroom.

(Focus mainly on communication and communication difficulties, and then on general differences among people)

Method:

First, the educator will lead the class in a discussion about general differences among people (for example, differences in personality and appearance)

Then, the class will brainstorm what they may be teased about in class (for example, being very tall/short, being sporty / artistic, or being studious / lazy)

The class will brainstorm how they would feel if they were a person who stuttered (had a communication difficulty) and how people might react to them

Then, brainstorm the different reactions that Peter could have shown toward the teasing comments (both negative and positive)

APPENDIX B: STUTTERING RESOURCE OUTCOMES MEASURE

Coded number: _____

Adapted from the PATCS- 36 scale (Langevin & Hagler, 2004).

School code: _____

Age: _____

Circle: Girl Boy

Class: _____

Do you know a person who stutters? (circle) Yes / No

If yes, how do you know this person? _____

Practice items:

Read each statement silently while I read it aloud. Then indicate how much you disagree or agree with the statement. There are five choices. Circle the choice that is **best for you**. There are no right or wrong answers.

1. I would eat earthworms.

Strongly Disagree Disagree Not Sure Agree Strongly Agree

2. Bryan Habana is a great rugby player.

Strongly Disagree Disagree Not Sure Agree Strongly Agree

3. I would enjoy playing soccer.

Strongly Disagree Disagree Not Sure Agree Strongly Agree

4. I would not go to the movies.

Strongly Disagree Disagree Not Sure Agree Strongly Agree

5. I would not play in the rain.

Strongly Disagree Disagree Not Sure Agree Strongly Agree

6. I would not want a present.

Strongly Disagree Disagree Not Sure Agree Strongly Agree

Read each statement silently while I read it aloud. Then indicate how much you disagree or agree with the statement. There are five choices. Circle the choice that is **best for you**. There are no right or wrong answers

1. I would like having a child who stutters live next door to me.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
2. I would avoid a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
3. Children who stutter are like normal children.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
4. I would be ashamed to be seen with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
5. I would enjoy doing a class project with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
6. Children who stutter are weird.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
7. I would introduce a child who stutters to my friends.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
8. I would be happy to have a child who stutters for a friend.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
9. I would not go to the shop with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
10. In class I would like to sit next to a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree

11. I would be frustrated listening to a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
12. I would like a child who stutters to talk for my group in class.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
13. Listening to a child who stutters would annoy me.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
14. I would let a child who stutters hang out with us.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
15. I would enjoy being with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
16. I would be best friends with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
17. I would be embarrassed to be with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
18. I would like having a child who stutters in my class.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
19. Children who stutter should not play games that involve talking.
Strongly Disagree Disagree Not Sure Agree Strongly Agree
20. I would spend time at break time with a child who stutters.
Strongly Disagree Disagree Not Sure Agree Strongly Agree

APPENDIX C: UCT HREC ETHICAL APPROVAL LETTER

APPENDIX D: PERMISSION FROM THE DEPARTMENT OF EDUCATION



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Department of Health and Rehabilitation Sciences
Divisions of Communication Sciences and Disorders,
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The Director: Education Research

Western Cape Education Department

Private Bag X9114

CAPE TOWN

8000

Dear Sir/ Madam

Permission to Conduct Research Study

The diverse nature of the South African school environment contributes to communication difficulties in the classroom. The aim of this study is to explore whether an educational resource aids in altering Grade 7 peers' attitudes towards children with communication difficulties. The study intends to engage collaborative efforts of Speech Therapy researchers, educators, learners and significant others.

As a Masters Speech Therapy student from the University of Cape Town, the researcher will be conducting research to supplement a greater study concerned with communication in the classroom. As postgraduate student, she will have the guidance and supervision of Prof Harsha Kathard and Vivienne Norman, qualified Speech-Language Therapists. Attached you will find the detailed proposal. Ethics approval has been obtained from the Faculty of Health Sciences Human Research Ethics Committee (HREC REF 601/2012).

This is an exploratory study and intends to determine whether learners' attitudes towards peers with communication difficulties change as a result of an educational resource tool. The Stuttering Resource Outcomes Measure (SROM) will be administered pre and post administration of the Classroom Communication Resource (CCR). The SROM will measure whether the resource tool altered the learners' attitudes towards their peers with communication difficulties. The administration of the resource will take one classroom lesson to complete. The researcher will be present in the class while the resource tool is being

administered. The inclusion of specific learners engaged in the study will depend on permission from school principals, informed consent from educators and parents as well as assent from learners themselves who are able to participate in a voluntary capacity. No pressure will be placed on learners to participate in the study, and there will be no repercussions regarding their decision to not partake in the research process. There is no financial benefit for participants to taking part in this study. The researcher and research assistants will comply with all of the ethical guidelines outlined in the proposal. This study will include intervention and control groups. The control group classes will still receive the CCR after pre and post test data has been collected for their potential benefit.

The researcher will outline her need for a voluntary, English mainstream mixed gender Grade 7 class where negative attitudes towards other learners might be present to the school principal, who may then identify appropriate classrooms within the school. The researchers will examine whether the educational resource has altered the Grade 7 learners' attitudes towards peers with communication difficulties through the administration of the SROM. The researchers will collect data on the learners' responses through observation in classrooms and administering learner questionnaires. Data collection will take place over a period of approximately six weeks and care will be taken to disrupt classes as little as possible.

At any point in the process, the researcher will be available to discuss any aspect of concern that might arise. The final write up of results will be shared with your department and the results will also be disseminated through academic publications.

I hereby request permission to conduct this study.

Thank you for considering this request.

Freda Walters

Tel: 083 456 0059

Email: Freda.Walters@uct.ac.za

*Prof Harsha Kathard (research supervisor): Harsha.Kathard@uct.ac.za, Tel: 021 406 6401

* Chairperson of Faculty of Health Sciences Human Research Ethics Committee: Prof Mark Blockman
Marc.Blockman@uct.ac.za, Tel: 021 406-6496

APPENDIX E: LETTER REQUESTING PERMISSION FROM PRINCIPAL



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Department of Health and Rehabilitation Sciences
Divisions of Communication Sciences and Disorders,
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The Principal

Dear Sir/ Madam

RE: Permission to Conduct Research Study

A Masters Speech Therapy student from the University of Cape Town is conducting a research project to supplement a larger study concerned with communication in the classroom. Communication can be defined as “an interaction or exchange of one’s feelings, ideas, thoughts or wants among two or more people by such modes as speech, writing, facial expression, gesture or touch.” Therefore, a communication difficulty arises when there is a breakdown at any stage of this exchange. The diverse nature of the South African school environment contributes to communication difficulties in the classroom.

The aim of this study is to determine the changes, if any, which occur in Grade 7 peers’ attitudes towards children who stutter after a classroom lesson. This study aims for Speech-language therapists researchers, educators, learners and significant others to work together. Since this is a postgraduate study, the student will have the guidance and supervision of Prof Harsha Kathard and Vivienne Norman, qualified Speech-Language Therapists. Ethics approval has been obtained from the Faculty of Health Sciences Human Research Ethics Committee.

The study will be done in Grade 7 classrooms. It will be conducted at times that are convenient and aim to not disrupt classroom activities. The procedure for the study is as follows: presentation of a video clip of an adolescent who stutters, administration of a short questionnaire by the researcher (Stuttering Resource Outcomes Measure: SROM) administration of the Classroom Communication Resource (CCR) by the teacher and lastly the administration of the questionnaire again. The educator will be briefed on how to administer the class lesson beforehand. The researcher will collect data through the administration of the questionnaires and will be present in the class while the class lesson is presented by the teacher. The questionnaire aims to measure whether the communication resource changes Grade 7 peers’ attitude towards learners who stutters. The collected data will subsequently be analyzed by the researcher.

The inclusion of specific participants engaged in the study will depend on permission from school principal, as well as informed consent from the parents and educators. Assent will also be obtained from the learners to ensure voluntary participation. No pressure will be placed on learners to take part in the study, and there will be no repercussions regarding their decision not to partake in the research process. In addition to this, participants will be made aware of their right to withdraw from the study at any point. There are no risks for the learners in taking part in this study and all results will be kept confidential with no names used as part of results. There will be no financial benefit from participants taking part in this study.

At any point in the process, the researcher will be available to discuss any aspect of concern that might arise. The final write up of results will be shared with your department and the results will also be disseminated through academic publications.

I hereby request permission to conduct this study in Grade 7 classrooms at your school.

Thank you for considering this request. You are welcome to contact the research supervisor or with any queries.

This project has met the ethical obligations expected by the Faculty of Health Sciences, University of Cape Town

Ethical Clearance Number: HREC REF 601/2012

Regards

Freda Walters

Tel: 083 456 0059

Email: Freda.Walters@uct.ac.za

*Prof Harsha Kathard (research supervisor): Harsha.Kathard@uct.ac.za, Tel: 021 406 6401

* Chairperson of Faculty of Health Sciences Human Research Ethics Committee: Prof Mark Blockman
Marc.Blockman@uct.ac.za, Tel: 021 406-6496

APPENDIX F: LETTER REQUESTING PERMISSION FROM TEACHER



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Department of Health and Rehabilitation Sciences
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The Educator

Dear Sir/ Madam

RE: Permission to Conduct Research Study

A Masters Speech Therapy student from the University of Cape Town is conducting a research project to add to a bigger project about communication in the classroom. Communication can be defined as “an interaction or exchange of one’s feelings, ideas, thoughts or wants among two or more people by such modes as speech, writing, facial expression, gesture or touch.” Therefore, a communication difficulty arises when there is a breakdown in this. The diverse nature of the South African school environment adds to communication difficulties in the classroom.

The aim of this study is to determine the changes, if any, which occur in Grade 7 peers’ attitudes towards children who stutter after a classroom lesson. This study aims for Speech-language therapists researchers, educators, learners and significant others to work together. Since this is a postgraduate study, the student will have the guidance and supervision of Prof Harsha Kathard and Vivienne Norman, qualified Speech-Language Therapists. Ethics approval has been obtained from the Faculty of Health Sciences Human Research Ethics Committee.

The study will be done in Grade 7 classrooms. It will be conducted at times that are convenient and aim to not disrupt your classroom activities. We will visit your class for two sessions of about an hour each. The procedure for the study is as follows: presentation of a video clip of an adolescent who stutters, administration of a short questionnaire by the researcher (Stuttering Resource Outcomes Measure: SROM) administration of the Classroom Communication Resource (CCR) by you, the teacher, and lastly the administration of the questionnaire again. You will be briefed on how to administer the class lesson beforehand. The researcher will collect data through the administration of the questionnaires and will be present in the class while the class lesson is presented by you. The questionnaire aims to measure whether the communication resource changes

Grade 7 peers' attitude towards learners who stutters. The collected data will be analyzed by the researcher afterwards.

Who gets to take part in this study will depend on permission from school principal, as well as informed consent from the parents and yourself. Assent will also be obtained from the learners to ensure they want to take part. No pressure will be placed on you or the learners to take part in the study, and there will be no consequences regarding a decision not to partake in the study. You have the right to withdraw from the study at any point. There are no risks for you or the learners in taking part in this study and all results will be kept confidential with no names used as part of results. There will be no financial benefit for you taking part in this study.

At any point in the process, the researcher will be available to discuss any aspect of concern that might arise and answer any questions you might have. The final write up of results will be shared with your department and the results will also be disseminated through academic publications.

I hereby request permission to conduct this study in Grade 7 classrooms in your classroom.

Thank you for considering this request. You are welcome to contact the research supervisor or with any questions.

Ethics approval has been obtained from the Faculty of Health Sciences Human Research Ethics Committee.
Ethical Clearance Number: HREC REF 601/2012

Freda Walters

Tel: 083 456 0059

Email: Freda.Walters@uct.ac.za

*Prof Harsha Kathard (research supervisor): Harsha.Kathard@uct.ac.za, Tel: 021 406 6401

* Chairperson of Faculty of Health Sciences Human Research Ethics Committee: Prof Mark Blockman
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APPENDIX G: PARENTAL CONSENT FORM



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Department of Health and Rehabilitation Sciences
Divisions of Communication Sciences and Disorders,
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Dear (Parent) _____

Information about research study: invitation and consent to participate

The aim of this research study is to look at the changes in Grade 7 learners' attitudes towards peers who stutter after taking part in a classroom activity. The study forms part of a Master's degree and depends on the teamwork of the Speech Therapy researcher, research supervisors, teachers and learners. Ethics approval has been obtained from the Faculty of Health Sciences Human Research Ethics Committee (HREC REF 601/2012)

A communication difficulty may involve not understanding what other people say, or having difficulty talking. These difficulties can affect how children talk to each other in the classroom and lead to negative attitudes if the difficulties are not understood. The researcher wants to know whether change happens in your child's attitude toward peers who stutter, after taking part in a classroom activity. The classroom activity will take one lesson of about an hour to complete and your child will have to fill out a form that determines their attitudes towards children who stutter (before and after the lesson). This will give us valuable information to know if the lesson will teach learners about stuttering and change their attitudes towards peers who stutter. The researcher will not reveal the name of your child to anyone and will not share private information. Your child is free to withdraw from the study at any point without any consequences. There is no risk for your child to take part in this study and they can potentially benefit by learning more about stuttering and having a more positive attitudes towards other children who stutter. The study will take place at times that are convenient and will not disrupt classroom activities. There is no financial reward for taking part in the study.

You are welcome to contact me on the number below if you have any questions. Thank you for considering this request.

Regards

Freda Walters

083 456 00 59, Email: Freda.Walters@uct.ac.za

* Chairperson of Faculty of Health Sciences Human Research Ethics Committee: Prof Mark Blockman
Marc.Blockman@uct.ac.za, Tel: 021 406-6496

*Research Supervisor: Prof Harsha Kathard
Harsha.Kathard@uct.ac.za, Tel: 021 406 6401

Response from Parents: Part A

I have read the invitation and understand what this study is about

I, _____ parent/guardian do give consent for _____
(learner name) to take part in this study.

Signature: _____

Date: _____

Contact number: _____

Response from Parents: Part B

This form is only to be completed by “allocated person” if the parent is unable to read and understand the letter on their own.

I, _____ have read the letter to _____
(parent/guardian name).

I have explained the contents of the form and answered question where needed. He/she has understood what it is about and has given me a verbal answer saying that he/she does want his/her child to take part in this study.

Name of “allocated person” _____

Signature: _____

Date: _____

Contact number: _____

APPENDIX H: LEARNER ASSENT FORM



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Department of Health and Rehabilitation Sciences
Divisions of Communication Sciences and Disorders,
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Dear (Learner) _____

Information about taking part in our study: invitation and assent to take part

The purpose of this study is to see if Grade 7 learners' attitudes towards children who stutter change after taking part in a classroom activity. You, along with your teacher and Speech Therapy researcher, will be part of this study.

A communication difficulty may include not understanding what other people say, or having difficulty talking. These difficulties can affect the way children treat each other in the class and lead to bullying and teasing if they do not know about these difficulties. We want to see if there are changes in learners' attitudes toward children who stutter, after taking part in a classroom lesson where your teacher reads you a story and talk with you about it. The lesson will take about an hour. We will ask you to fill in a form to tell us what you think about children who stutter. Your name will not be made known to anyone and you are free to not take part in the study at any point without any consequences. There is no risk for you in taking part in this study and you might benefit by learning more about stuttering. The study will take place at times that suit the school and teacher and will not disrupt classroom activities. You will not get any money for taking part in the study. You are welcome to ask us questions when we come to your classroom if you don't understand something.

Thank you for thinking about this invitation

Regards

Freda Walters

Tel: 083 456 0059, Email: Freda.Walters@uct.ac.za

Ethics approval has been obtained from the Faculty of Health Sciences Human Research Ethics Committee (HREC REF 601/2012).

* Chairperson of Faculty of Health Sciences Human Research Ethics Committee: Prof Mark Blockman

Marc.Blockman@uct.ac.za, Tel: 021 406-6496

*Research Supervisor: Prof Harsha Kathard

Harsha.Kathard@uct.ac.za, Tel: 021 406 6401

Response from Learner

I have read the invitation and understand what the research study is about.

I agree to take part in this study

Name: (in block letters) _____

Signature: _____

Date: _____

Contact number: _____

APPENDIX I: CLUSTER COMPARISON FIGURES

Figure I1. Control group cluster comparison

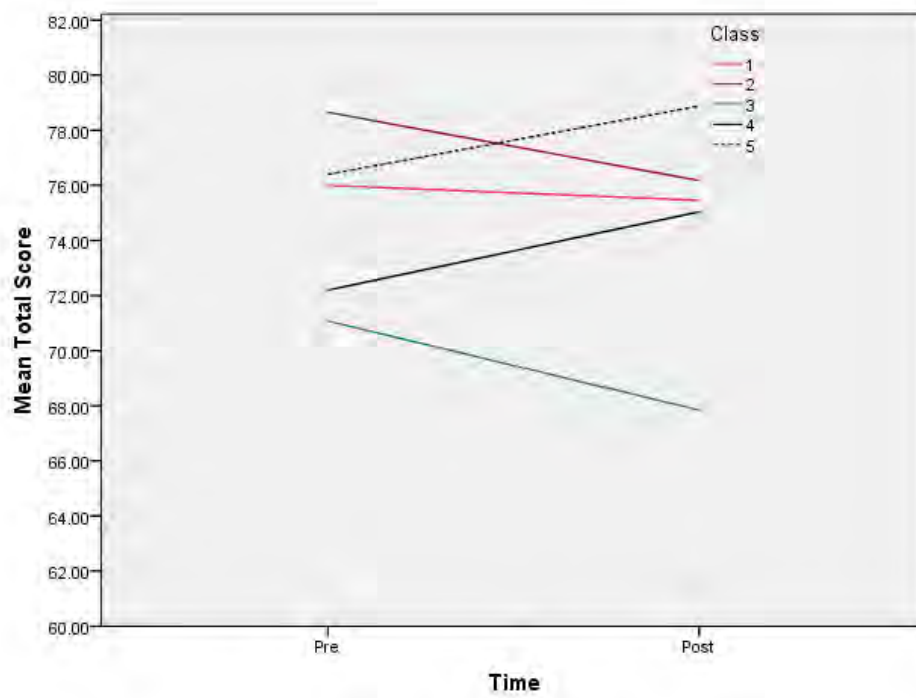
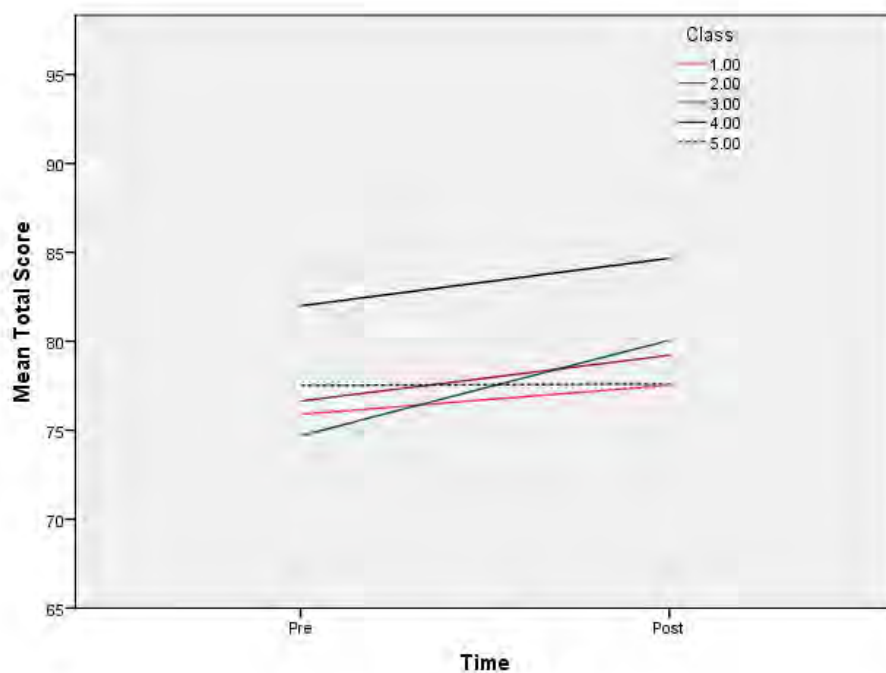


Figure I2. Experimental group cluster comparison



APPENDIX J: ADDITIONAL DATA TABLES

Table J1

Medians and Interquartile range of subscales on SROM

Test Phase	SROM subscale	Median	Interquartile range		
Pre-Test	PSD	41	36	-	44
	VI	16	14	-	17
	SP	21	20	-	23
Post-Test	PSD	42	39	-	47
	VI	16	14	-	17
	SP	21	20	-	24

Table J2

Means and Standard Deviation for females and males in experimental group

Pre-Test	N	Min	Max	Mean	Std Err.	Std Dev.	[95% Conf. Interval]
Males	39	45	94	77.72	1.68	10.47	74.32 - 81.11
Females	47	64	97	76.62	1.21	8.28	74.19 - 79.05
Post-Test	N	Min	Max	Mean	Std Err.	Std Dev.	[95% Conf. Interval]

Males	39	42	95	79.31	1.73	10.81	75.80 - 82.81
Females	47	53	100	79.28	1.35	9.27	76.55 - 82.00