

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

The previous chapters described the theoretical framework underlying the main study and provided an overview of the relevant literature examining the transformations within both the rehabilitation and the corporate domains. With specific reference to individuals with a TBI, the need was highlighted for the development of training programs within the corporate sector, in order to remove barriers and enhance participation. In this chapter, attention is given to the research methodology used in the study. Firstly, the aims and objectives of the research are identified, followed by a discussion of the research design used. The preparatory phases laying the foundation for the main study are then presented, followed by the pre-experimental phase, the pilot study with its results and recommendations, and thereafter the experimental research phase of the main study. Finally, a description of the participants, data collection procedures and data analysis used in the main study follows.

4.2 Methodology

4.2.1 *Main Research Aim*

To investigate the ability of sales assistants to identify barriers to, and facilitators of interaction involving customers with a cognitive-communication disorder following a TBI, and whether training impacts on this ability.

4.2.2 *Sub-aims*

Three objectives delineate the means whereby the research aim was realized, namely:

- i) To develop and administer two questionnaires (on two different occasions) in order to determine the confidence and skill of the sales assistants in identifying the barriers to, and facilitators of interactions involving customers with a cognitive-communication disorder following a TBI;

- ii) To develop and conduct a once-off training session in order to increase the confidence and skill of sales assistants in identifying the barriers to, and facilitators of such interactions; and
- iii) To analyze the inter-and-intra-group results in order to examine and compare the similarities and differences between the experimental and control groups' performance on the confidence and skill constructs of pre-and-post questionnaires 1 and 2.

4.3 Research design

The present study adopted a control group design (McMillan & Schumacher, 2001). Stores in the Northern region of a large South African retail supermarket chain were randomly assigned to the experimental and control groups. This design was selected as best demonstrating the changes (after a once-off training session) in the sales assistants' ability to more confidently interpret diverse behaviours, and to enhance their understanding of the skills necessary to facilitate interacting with customers with a TBI.

4.3.1 Research phases

The current research (outlined in Table 4.1) comprises 3 major sections: Section 1 is the preparatory phase to the study; Section 2 the pre-experimental phase, including the pilot study; and Section 3 the experimental phase of the main study.

Table 4.1 Research phases

SECTION 1: PREPARATORY PHASES
Step 1: April 2003: Obtaining support to carry out the pre-experimental research and main study with the Gauteng and Northern region stores respectively of a large South African retail supermarket chain store; and
Step 2: May 2003: Sampling of questions to be used in focus groups in the pre-experimental phase of the study.
SECTION 2: PRE-EXPERIMENTAL PHASE
Steps 1 - 3: Needs analysis through focus groups, and an expert questionnaire:
Step 1: June 2003: Two focus groups with customers with a TBI.
Step 2: June 2003: One focus group with sales assistants from Gauteng region of a large retail supermarket chain store.
Step 3: June 2003: Expert questionnaire determining awareness of experts working locally and internationally with individuals with TBI, regarding barriers to, and facilitators of interactions involving sales assistants and customers with a TBI.
Steps 4-6 : Development of material for use in the Main study:
Step 4: June – October 2003: Information gained to assist in the identification and production of video scenarios to be used for pre-and-post questionnaire administration, as well as for training material.
Step 5: August 2003 – March 2005: The development and refinement of two questionnaires for pre-and-post questionnaire administration.
Step 6: February 2003 – March 2005: The development and refinement of a training session for use in the main study.
Step 7: March 2005: Pilot study.
SECTION 3: MAIN STUDY/ EXPERIMENTAL PHASE
Session 1: March 2005: Pre-questionnaire administration to the experimental and control groups – to determine their confidence and skill in identifying barriers to, and facilitators of sales interactions involving customers with a TBI.
Session 2: April 2005: 4 hour training session for the experimental group assisted by a research assistant with a TBI.
Session 3: April 2005: Post-questionnaire administration to the experimental and control groups – to determine their confidence and skill in identifying barriers to, and facilitators of sales interactions involving customers with a TBI.
Courtesy training session for the control group.

The phases will be described in detail in Sections 4.3.1.1; 4.3.1.2; and 4.4.

4.3.1.1 Section 1: Preparatory phases for the main study

Section 1 consists of two steps in preparation for the pre-experimental phase of the study

i) Section 1: Step 1:

In April 2003, the researcher approached the General Manager (GM) of the Northern Region of a large South African retail supermarket chain store with a proposal to obtain support to carry out the main study within the stores in his region, and for all pre-experimental work to be carried out in an adjacent region, the Gauteng region of the same chain. This retail company was approached in view of the widely held perception that as a company it has always been an innovative, socially responsible company, proactive in its responsibility towards both its customers and its personnel (Ackerman 2002; 2005). Support was granted by the GM of the Northern region (via a letter of intention which was given to the researcher), together with the commitment to fund the production of all video scenarios by a professional video company for use in the pre-and-post questionnaire administration, and training session of the main study.

ii) Section 1: Step 2:

In May 2003, the researcher formulated a list of 10 draft questions to be used with various focus groups in the pre-experimental phase of the study. These questions reflected the combined input of the following sources: Cottrell (2001); Supported conversation for aphasic adults: Enhancing communicative access (Aphasia Centre and Lifetime Productions, 1996); Krueger (1988); Krueger and Casey (2000). The questions were sampled with the PhD (CAAC) group, as well as with 2 Clinical Psychologists who had extensive experience in the field of adult brain injury, and relevant modifications were made.

4.3.1.2 Section 2: Pre-experimental phase

Section 2 comprises seven steps. *Steps 1 - 3* are aimed at identifying awareness, and perspectives held by a number of different sources of the barriers to, and facilitators of interactions between sales assistants and customers with a TBI during sales transactions. By means of interviewing purposefully-sampled groups of individuals (Bornman, 2001; Brotherson, 1994; Krueger, 1988; Krueger & Casey, 2000; McMillan & Schumacher, 2001; Sohlberg et al., 1998), data and insights were gained that would normally be less attainable, and that would assist in understanding the experience of the barriers and facilitators for customers with a TBI as well as sales assistants within the shopping environment specifically. *Steps 4 - 6* respectively describe the development and process of refinement of video scenario material; the 2 pre-and-post questionnaires, together with the item analysis used to formulate the confidence and skill constructs; and a once-off 4 hour long training session to be used in the main study.

i) *Step 1: Focus groups with individuals with a TBI*

Step1 aimed at determining perspectives regarding the shopping experience expressed by 2 focus groups of individuals with a TBI. A summary of these focus groups is presented in Table 4.2.

Table 4.2 Focus groups with individuals with a TBI

CATEGORY	DESCRIPTION
Participants	Group members in the conversation group for individuals with a TBI (University of Pretoria) (focus group 1); as well as at Headway (a support group for individuals with a TBI) (focus group 2), were approached to participate voluntarily in a discussion on the shopping experience. The criterion for participation was the willingness to share ideas related to this topic. During June 2003, on 2 different occasions, six members from each TBI group met with the researcher (assisted by a final year SLP student). All participants were familiar with one another so that the experience was informal and non-threatening.
Aims	To determine the perceptions of individuals with a TBI regarding the experience of shopping - including dealing with sales assistants and their reactions. The following five open-ended questions were used for discussion: i) Tell me about your shopping experiences. ii) What are the difficulties you experience when shopping? iii) How do you normally cope with these difficulties? Do you do anything special to help you shop more successfully? iv) Whom do you ask to help you? v) Do you find sales assistants helpful or uncomfortable when serving you? Why?
Method	The researcher led the respective focus groups in a semi-structured discussion of the open – ended questions (Frey & Fontana, 1993). Participants were assured of their anonymity, and encouraged to share ideas openly, with the understanding that there were no right or wrong answers. Participants were informed that they were being tape recorded in order to facilitate accurate transcription by the researcher, and were asked to sign a letter of consent, and complete a short biographical background form before commencing with the discussion (<i>Appendix 2A & 2B</i>). Member checks were included to ensure the trustworthiness of the information, whereby the facilitator summarized the group input at the end of each of the five questions. Participants were asked to confirm whether they agreed, disagreed, or if any important information had been overlooked by the researcher (Bornman, 2001; Hoffart, 1991; Krueger & Casey, 2000). Both focus groups lasted 1 hour. Immediately after the focus group sessions, the researcher and her assistant spent some time debriefing and sharing their respective interpretations in order to enhance the trustworthiness of the data (Bornman, 2001; Brotherson, 1994; Peshkin, 1993). Brotherson and Goldstein (1992), and Kimchi, Polivka and Stevenson (1991) have likewise advocated debriefing as an important aspect of investigator triangulation to increase the credibility of the data obtained. Verbatim transcriptions of these 2 focus groups were made.
Analysis	The researcher formulated a summary of broad issues raised, together with identifying the specific range of problems perceived by both focus groups when shopping. These were then confirmed in discussion with the research assistant, facilitating analytic stability (Bornman, 2001; Brotherson, 1994; Brotherson & Goldstein, 1992), and credibility of data (Krueger, 1988; Krueger & Casey, 2000). It was necessary to review the complete text frequently in order to contextualize and interpret the data appropriately (Bornman, 2001).

Table 4.2 (continued). Focus groups with individuals with a TBI

CATEGORY	DESCRIPTION
Results	<p>A summary of the barriers highlighted by these two focus groups is provided in <i>Appendix 3</i>. Broad observations noted by both focus group participants included:</p> <ul style="list-style-type: none"> ▪ A range of opinions re the shopping experience – from feeling uncomfortable and misunderstood, to it being considered a positive experience. ▪ Many participants expressed the experience of shopping being a social outing, reducing one’s sense of isolation. ▪ Higher level participants verbalized how successfully hiding their subtle difficulties enabled them to be treated as a “normal” person. In contrast, those participants using a wheelchair or walker and with speech difficulties, verbalized the stigma of being disabled when shopping – where other shoppers and sales assistants are uninformed about TBI, and don’t know how to assist or talk to them. ▪ Volunteers from both focus groups were asked to put their names on a list to participate later in the year in videoing in various branches in the Gauteng region of the supermarket chain, in order to assist the researcher to gather material for the main study.
Implications	<ul style="list-style-type: none"> ▪ Consensus amongst all focus group participants regarding the need for education of sales assistants in order to make the shopping experience a more positive one for all. ▪ Participants verbalized how training would make shopping a more communication-friendly environment where: sales assistants could assist customers with greater awareness and respect, and customers with disability could shop more successfully and independently. ▪ volunteers were identified to be contacted at a later stage by the researcher to be ▪ “customers” in in-store videos. These individuals were English speaking and were selected based on their motivation to participate, having verbalized various difficulties and frustrations with shopping. In addition, the selected customers with a TBI were required to exhibit a range of possible difficulties including physical /walking difficulties, as well as cognitive-communication difficulties (possibly compounded by dysarthria).

ii) *Step 2: Focus group with sales assistants*

Step 2 aimed at determining perceptions regarding the shopping experience expressed by a focus group of sales assistants in a store in the Gauteng region of the participating supermarket chain (different from the Northern region where the main study took place). A summary of this focus group is presented in Table 4.3.

Table 4.3 Focus group with sales assistants from a retail store in the Gauteng region

CATEGORY	DESCRIPTION
Participants	A retail supermarket store in the Gauteng Region was approached by the Consumer Affairs co-ordinator of that region to provide 6 sales assistants (1 Customer Service Manager (CSM) and 5 Deli/ Bakery sales assistants) to form a focus group for gathering information regarding their ability to interact with customers with a brain injury. Six sales assistants met with the researcher (assisted by a final year SLP student) on one occasion in June 2003. They were all familiar with one another so that the experience was informal and non-threatening.
Aims	To determine sales assistants' ability to identify potential barriers and facilitators when serving a customer with a communication disorder. Part of an instructional video: <i>Supported conversation for aphasic adults: Enhancing communicative access</i> (1996) was shown to the group (with permission obtained from A.Kagan (personal communication, April 15, 2003), and the following 5 open-ended questions were then posed to the group for discussion: i) How do you think a customer like Gerry would manage with shopping? ii) What difficulties do you think he might experience as a customer? iii) How could he cope with these difficulties? iv) Whom could he ask for help with his shopping? v) What could you do to make shopping easier for Gerry?
Method	The researcher led the focus group in a semi-structured discussion of the questions (Frey & Fontana, 1993). Participants were assured of their anonymity, encouraged to share ideas openly, with the understanding that there were no right or wrong answers, and were informed that they were being tape recorded in order to facilitate accurate transcription by the researcher. In addition, they were asked to sign a letter of consent, and complete a short biographical background form before commencing with the discussion (<i>Appendix 4A and 4B</i>) Member checks were included to ensure the trustworthiness of the information, whereby the facilitator summarized the group input at the end of each of the 5 questions. Participants were asked to confirm whether they agreed, disagreed, or if any important information had been overlooked by the facilitator (Bornman, 2001; Hoffart, 1991; Krueger & Casey, 2000). The focus group lasted 1 hour.
Method	Immediately after the focus group sessions, the researcher and her assistant spent some time debriefing and sharing their respective interpretations in order to enhance the trustworthiness of the data (Bornman, 2001; Brotherson, 1994, Peshkin, 1993). Verbatim transcriptions of this focus group were made.
Analysis	The researcher formulated a summary of broad issues raised by the group which were then confirmed in discussion with the research assistant, thereby facilitating analytic stability (Bornman, 2001; Brotherson, 1994; Brotherson & Goldstein, 1992), and the credibility of data (Krueger, 1988; Krueger & Casey, 2000).
Results	Broad observations noted by focus group participants included: <ul style="list-style-type: none"> ▪ A tendency to classify anyone with a speech problem as being “deaf and dumb” who should either use some kind of sign language, or bring in a “note” about their shopping needs. ▪ A willingness to assist this kind of customer as patiently as possible – including doing their shopping for them, particularly if they bring along a shopping list. ▪ An awareness of regular customers in their store who come in their wheelchairs, or are “deaf and dumb” and are made to feel comfortable in the store. ▪ An uncertainty of what to do in order to serve a customer who cannot be understood so well. ▪ Verbalizing the need for more training in this area.
Implications	Participants verbalized the need for more training in dealing with customers with speech difficulties.

iii) *Step 3: Expert questionnaire*

Step 3 comprised a questionnaire e-mailed to a group of 14 local and international experts having extensive experience of working with adults with brain injury. A summary of this input is presented in Table 4.4.

Table 4.4 Input from Expert Questionnaire

Category	Description
Participants	8 Speech-Language Therapists, 3 Neuropsychologists and 3 Occupational Therapists completed a questionnaire e-mailed to them by the researcher. All are experts in the field of adult brain injury, having extensive experience working with individuals with acquired brain injury in particular (<i>Appendix 5A and 5B</i>).
Aims	Questionnaire aimed to have experts identify the issues they perceive as potential barriers and facilitators for both the customer when shopping, and the sales assistant serving a customer with a TBI. Suggestions for training were also requested (<i>Appendix 5B</i>).
Method	The researcher e-mailed respondents during May 2003 requesting their willingness to participate in an electronic questionnaire to be e-mailed to them during June 2003 (<i>Appendix 5A</i>). All participants responded positively to completing the questionnaire. In June 2003, the questionnaire was e-mailed to the same group of respondents, all of whom replied within a 10 day period (<i>Appendix 5B</i>).
Analysis	All questionnaires were examined by the researcher, and trends were noted in the answers to each question.

Table 4.4 (continued). Input from Expert Questionnaire

Category	Description
Results	<p>Trends reflected in the answers to the questions included:</p> <p><i>Problem types:</i></p> <ul style="list-style-type: none"> ▪ Impulsive buying. ▪ Difficulty dealing with pressure. ▪ Over-familiarity with sales person, other unusual behaviours – temper tantrums, silliness; impatience and outbursts in checkout lines. ▪ Difficulty reading signs and labels. ▪ Difficulty reaching certain items high up on shelves due to physical limitations. ▪ Inefficient shopping – difficulty finding items. ▪ Distractible in a busy environment. ▪ Difficulty asking relevant questions clearly and concisely. ▪ Difficulty in calculating money and change. ▪ Depending on extent of motor speech problems – difficulty making themselves understood. <p><i>Sales assistant reactions:</i></p> <ul style="list-style-type: none"> ▪ A range including: discomfort; annoyance; anxiety; empathy; avoidance. ▪ May speak to the customer in a demeaning manner. ▪ May refer everything to the other person accompanying the customer with a TBI. <p><i>Suggested training procedures:</i></p> <ul style="list-style-type: none"> ▪ Knowledge a powerful tool. Start with information about TBI. ▪ Expose the person behind the disability by revealing their competence. Where appropriate, train with supported conversation skills to achieve this. Where appropriate, train the person with the disability to deal with this situation – a partnership. ▪ Make videos of various shopping scenarios (even simulated). Constructively analyze the scenario and create model scripts for the individual with a TBI, and the sales assistant. ▪ Valuable to increase sales person’s awareness - teach some practical tips such as using a paper and pen with some customers who might be difficult to understand. ▪ Train skills – knowing how to talk to a customer who cannot speak so well. Let the customer know that it’s hard to understand them, but they can take their time; move the customer off into a quieter area to deal more efficiently and satisfactorily with their needs. ▪ Training would be valuable to change attitudes in the sales assistant, and to make the customer feel more supported. <p><i>Adjustments needed:</i></p> <ul style="list-style-type: none"> ▪ Better signage around the store. ▪ Training one particular sales assistant to be the expert in dealing with such customers. ▪ Let public know store is accessible and disability-friendly. Advertise the name of the contact person in the store in the event of difficulties arising. <p><i>Value of a training session:</i></p> <ul style="list-style-type: none"> ▪ Customers treated more respectfully. ▪ More tolerant and competent if more aware. ▪ Sales assistants feel more competent and confident. ▪ Store identified as a socially responsible store.
Implications	<p>Consensus amongst all respondents regarding the potential (within the retail encounter) of a variety of difficulties for both the customer with a TBI and the sales assistant. Strong support expressed for the value of training to make the retail experience a more accessible and comfortable one for all, thus providing additional evidence in support of the main study.</p>

Section 2: steps 4 - 6

Steps 4 - 6 represent the steps taken in the development and refinement of the following material required for the main study – namely:

Step 4: development and refinement of video scenarios,

Step 5: development and refinement of 2 pre-and-post questionnaires, and

Step 6: development and refinement of a training session.

These are described below.

iv) Step 4: Development and refinement of video scenarios

In the endeavour to develop and refine a set of realistic video scenarios for use in the main study, the researcher reviewed the transcribed material obtained from the 3 focus groups, together with the input from the expert questionnaires (described in *steps 1-3* above) to identify common potentially difficult themes for customers with a TBI, as well as for the sales assistants serving them. These themes were used to formulate 5 scenarios (*Appendixes 6 and 7*) to be videotaped using 6 and 4 volunteers with a TBI as “customers” in several identified supermarket stores in the Gauteng region during 2 in-store videotaping days in July and October 2003 respectively. Table 4.5 below summarizes the steps involved in this process.

Table 4.5 Steps in the development and refinement of video scenarios

IN-STORE VIDEO	METHOD	OUTCOME
<p>First videotaping session: July 2003: <i>Advance Planning day 1</i></p>	<p>a) Before videotaping took place, the researcher met with the professional videographer to plan the implementation of the trial videoing, in order to make the transaction as realistic as possible, and to reduce possible intrusion of the video camera on the sales transaction.</p> <p>b) The videographer accompanied the researcher in walking around the 2 designated stores in the Gauteng region, to determine how best to videotape within a busy retail context.</p> <p>c) Met with the relevant store managers and shop stewards to discuss the plans for videotaping.</p>	<p>Plan to hire hidden (spy) cameras (to complement use of conventional video cameras).</p>

Table 4.5 (continued). Steps in the development and refinement of video scenarios

IN-STORE VIDEO	METHOD	OUTCOME
<p>First videotaping session: 21 July 2003: 2 stores - Gauteng region.</p>	<p>a) The managers of the 2 designated stores asked for volunteer sales assistants to participate later that day in being videoed serving customers (to gather material for training purposes). The “customers” were not identified for them. Information was read to them about the videotaping proceedings (provided to them in advance by the researcher) (<i>Appendix 8</i>). b) All 6 “customers” with a TBI completed a consent to participate form in advance of the videotaping, and were each given a very broad outline of the anticipated scenario before being asked to proceed with it (<i>Appendix 6</i>). Video scenarios, while planned, were not scripted in detail in advance, so that the individual “customer” with a TBI was encouraged to use their own initiative in dealing with the unfolding demands of the interaction with the sales assistant.</p>	<p>Participants with a TBI were videotaped in 5 different scenarios in various parts of the 2 stores by 2 professional videographers over a full day period (while the stores were fully operational). Both visible as well as hidden cameras were used. The latter were clipped onto the “customer’s” cap, jersey or handbag. At the end of the day, all participants with a TBI expressed great enthusiasm for the experience, and the motivation to participate in further videoing endeavours. The videographers likewise enjoyed the day, in spite of enormous challenges to obtain suitable video footage.</p>
<p>Transcription of video footage obtained on first in-store videotaping day</p>	<p>The researcher transcribed the video footage, for rough editing by the videographer in order to produce a draft videotape (with 5 video scenarios) for discussion with the PhD (CAAC) group during an Onsite week in August 2003.</p>	<p>Constructive input was given to modify future in-store video plans in the following ways: * The need to video more focused interactions in specific parts of the stores (rather than wandering around the stores); * Suggestion to use visible rather than hidden cameras, as the sound quality and visual material obtained was neither visually stable, nor good enough for use in the current research; * Specific requirements to be asked of sales assistants in terms of their having to try to be as realistic as possible in spite of being videotaped; * Discussion around which “customers” with a TBI to use again in further videoing endeavours; and the need to recruit additional “customers” to stand in the line and attempt to add pressure on the interaction where appropriate.</p>
<p>Second videotaping session: October 2003: Advance Planning day 1</p>	<p>a) Prior to the second in-store video session, the researcher met with the store managers and shop stewards of another 3 designated stores in the Gauteng region. A rationale was presented for obtaining in-store video material and the outcome of material obtained during the July in-store videoing was shared with them. b) Managers were asked to supply items from the store to be returned by the “customer” with a TBI, and to identify sales assistants who would be willing to be videoed in the interactions. c) Participating sales assistants were to be informed that they would be videoed in order to gather material for training purposes. d) Met with the videographer to plan the in-store scenarios to be videotaped on the 14th October, 2003, and specific suggestions were given to facilitate optimum video footage.</p>	<p>Each of the 3 participating stores selected a suitable date during October for in-store videoing to take place. The decision was taken to use visible videos with additional microphones clipped onto the “customer’s” clothing (rather than hidden cameras), in order to optimize the audio and visual quality of the videos.</p>

Table 4.5 (continued). Steps in the development and refinement of video scenarios

IN-STORE VIDEO	METHOD	OUTCOME
<p>Second videotaping session: 14 October 2003: 1 store- Gauteng region.</p>	<p>a) Before videoing commenced, relevant sales assistants were identified by the store manager to participate willingly in the videoing. In addition, the manager, assistant manager, and CSM agreed to be available in the event of needing a manager to be called to assist during the videotaped sales transaction. The “customers” were not introduced to them in advance of being videoed.</p> <p>b) The store manager also provided the researcher with appropriate items to be returned during the one scenario, and read the selected sales assistants some information about the videotaping (provided to him by the researcher before videotaping commenced) (<i>Appendix 8</i>).</p> <p>c) “Customers” with a TBI were given a very broad outline of each of the scenarios before they entered the store accompanied by the 2 videographers (<i>Appendix 7</i>). They were asked by the researcher to go to a particular area of the store and to follow a particular scenario. Video scenarios while planned were not scripted in detail in advance, so that the individual “customer” with a TBI was encouraged to use their own initiative in dealing with the unfolding demands of the interaction with the sales assistant.</p> <p>d) In addition, the researcher recruited 2 non-disabled “customers” who were told in advance that they would be asked to stand in the line behind the individual with a TBI at a specific time. The individuals with a TBI did not know who they were, nor of the researcher’s intention to place them in the line as and when deemed necessary</p>	<p>All sales assistants expressed enthusiasm to participate in the in-store videoing.</p> <p>2 videographers videoed 4 participants with a TBI as “customers” (using visible cameras, with a small microphone clipped onto their shirts) in a single store in the Gauteng region over a morning period, while the store was fully operational.</p> <p>The videoing was more organized and efficient than in the first videotaping session (July 2003), with the result that only 5 of the 10 planned video scenarios were videoed (<i>Appendix 7</i>), and all participants enjoyed the experience.</p> <p>The researcher examined the 5 unedited video scenarios in depth to roughly edit them with the videographer. This video footage was considered (with further editing) to be the best approximation possible to a representative supermarket sales interaction, adequately highlighting the themes identified as universally-problematical barriers, as well as facilitators during sales transactions with various customers with a TBI, for use in the main study. All further in-store videoing plans cancelled.</p>
<p>Selection and editing of video scenarios to be used in pre-and-post questionnaire administration, as well as training session</p>	<p>7 scenarios (obtained from the first and second videotaping sessions in July and October, 2003 respectively) were selected to be finely edited for use with both the pre-and-post questionnaire administrations, and during the training session.</p>	<p>The scenarios selected (to be used in conjunction with the pre-and-post questionnaires 1 and 2) were considered to reflect both typical sales interactions, and also highlight the barriers to, and facilitators of interactions involving sales assistants and customers with a TBI.</p> <p><i>Video scenario 1</i> (Table 4. 6) (accompanying pre-and-post questionnaire 1) actually took 21 minutes and 54 seconds from beginning to end, and once edited, took 15 minutes and 06 seconds. Further editing was considered to interfere with the scenario content that made it so typical of an interaction between a customer with a TBI and a conversation partner (<i>Appendix 9</i> provides a detailed transcription of the content of this video scenario).</p>

Table 4.5 (continued). Steps in the development and refinement of video scenarios

IN-STORE VIDEO	METHOD	OUTCOME
		<p><i>Video scenario 2</i> (Table 4. 6) (accompanying pre-and-post questionnaire 2) actually took 9 minutes and 12 seconds from beginning to end, and once edited, took 8 minutes and 18 seconds. (<i>Appendix 10</i> provides a detailed transcription of the content of this video scenario).</p> <p><i>Video Scenarios 3 - 7</i> (Table 4.6) were used for training material during the training session of the main study.</p> <p>Clear instructions were provided to assist the videographer in editing all video scenarios (<i>Appendix 11</i>). Captions were added to guide the research participants by providing more information, and a Disclaimer (with wording provided by the participating company) was inserted at the beginning of the videos. Videos were produced in standard and DVD format for use by the researcher during the main study.</p>

Table 4.6 identifies the video scenarios used in the main study:

Table 4.6 Video scenarios used for the main study

VIDEO SCENARIO	DURATION (ONCE EDITED)	TOPIC	PRE-AND-POST QUESTIONNAIRE ADMINISTRATION / TRAINING SESSION
1	15 minutes 06 seconds	Photo counter scenario: customer endeavours to purchase an 800 ASA spool.	Questionnaire 1: Pre-and-post questionnaire administration
2	8 minutes 18 seconds	Returns counter scenario: customer returns 2 expensive items without a slip.	Questionnaire 2: Pre-and-post questionnaire administration
3	8 minutes 15 seconds	Buying items with R50.00. Two customers given R50 to buy something to eat.	Training session
4	2 minutes 5 seconds	Customer with dysarthric speech requests items from the sales assistant/ manager. Helpful and intrusive strategies used by sales assistants when serving her.	Training session
5 – 7	3 minutes 24 seconds	Customer with dysarthric speech requests items from various sales assistants. Helpful and intrusive strategies used by sales assistants to serve her.	Training session



Figure 4.1 Video scenario 1: Photo counter scenario.

v) *Step 5: Development and refinement of 2 pre-and-post questionnaires*

Between August 2003 and March 2005 the researcher compiled and refined an initial set of 10 questions (based on repeated observations of the video scenarios obtained in July and October 2003) into 2 pre-and-post questionnaires that were administered during March and April 2005 during the main study (*Appendixes 12 & 13*) in conjunction with video scenarios 1 and 2 respectively (Table 4.6).

This process of ongoing development and refinement of the pre-and-post questionnaires, culminating in an item analysis of the questionnaires into skill and confidence constructs is reflected in Table 4.7 below.

Table 4.7 Steps in the development and refinement of the pre-and-post questionnaires 1 and 2

QUESTIONNAIRE CONTENT	REFINING OF QUESTIONNAIRES	OUTCOME
<p>From an initial 10 questions (August 2003), two draft questionnaires were developed (November 2003) to more accurately tap into sales assistants' perceptions regarding 2 different sales transactions for the 2 identified video scenarios to accompany the pre-and-post questionnaire 1 and 2 administrations (questionnaire 1 in relation to video scenario 1; and questionnaire 2 in relation to video scenario 2). Each questionnaire had 19 questions with a range of 2-6 correct options, and a total of 75 choices for the respondent to choose from. A 5-point Likert Scale was used for each of the options, ranging from <i>Strongly Agree</i> to <i>Strongly Disagree</i>.</p>	<ul style="list-style-type: none"> • Review of literature (Bedrosian et al.,2003; Cottrell, 2001; Cummings, Stewart & Hulley, 2001; Mayo & DuBois, 1987g; Mertens, 1998; Worrall, McCooley, Davidson, Larkins, & Hickson, 2002; and the framework of the Activities, Participation and Environmental constructs of the ICF (WHO, 2001)); • Input from focus groups of individuals with a TBI, sales assistants and experts (<i>Steps 1-3</i>); • Input from the PhD (CAAC) group; • Ongoing personal communication with colleagues locally, and international experts including: Cottrell (2003); Kagan (2004); Sohlberg (2004);Threats (2003); Togher (2004) (<i>Appendix 1C</i>); • Discussion with relevant management of the chain store participating in the current study; and • Frequent discussion and guidance from a statistician. 	<p>Constructive input was given, with T.Threats advising that as the sales assistants knew they were being videotaped, it would “in some ways be a role playing situation – not really living it.” He therefore urged the researcher to develop questions with the sales assistants looking at how they would also do in this simulated situation (personal communication, September 2, 2003) (<i>Appendix 1C</i>).</p>
	<p>Discussed questionnaire content, as well as the appropriateness of language used for the sections on: Instructions for Participants; Letter of Consent to Participate before completing the questionnaire; and Biographical Information Form (<i>Appendices 14, 15 & 16</i> respectively), with the statistician, the Consumer Affairs Co-ordinator, and the Frontline Training Co-ordinator of the Northern region stores of the supermarket participating in the study, as well as the PhD (CAAC) group of students. January – March 2005: Ongoing discussion with statistician and PhD (CAAC) group, leading to further refinement of the questionnaires.</p>	<p>Reduction of questions to 26 questions on pre-and-post questionnaire 1, and 25 questions on pre-and-post questionnaire 2, and to using a 3 point Likert rating scale for each item on both questionnaires. Wording of Instructions for the Participants; Letter of Consent to Participate; and Biographical Information Form considered appropriate. 21 questions in pre-and-post questionnaire 1, and 15 questions in pre-and-post questionnaire 2, each with a 3-point Likert scale, with possible levels of responses for each question ranging from <i>Agree</i> to <i>Unsure</i> to <i>Disagree</i>.</p>

Table 4.7 (continued). Steps in the development and refinement of the pre-and-post questionnaires 1 and 2

QUESTIONNAIRE CONTENT	REFINING OF QUESTIONNAIRES	OUTCOME
		<p>Questions in both questionnaires were broadly based on the framework of the Activities, Participation and Environmental constructs of the ICF (WHO 2001) (<i>Appendix 17</i>). Pre-post questionnaire 1 comprised 21 questions around the photo counter scenario (video scenario 1 (Table 4.6)); and pre-post questionnaire 2 comprised 15 questions around the returns counter scenario (vide scenario 2 (Table 4.6)). Both questionnaires contained 6 identical questions (questions 4; 7; 9; 13; 19 and 20 in questionnaire 1 were identical to questions 4; 7; 9; 11; 12; and 14 on questionnaire 2 respectively). Remaining questions on the final version of both questionnaires reflected specific issues around the 2 different scenarios.</p>
<p>Pilot study: (<i>Appendix 18</i>)</p>	<p>March 2005: 2 questionnaires piloted with a group of 5 sales assistants from the retail supermarket chain store participating in the study.</p> <p>March 2005: Researcher presented pilot data to the PhD (CAAC) group and Swedish collaborators visiting South Africa.</p>	<p>All participants completed the questionnaires with apparent ease. Instructions for Participants (<i>Appendix 14</i>) modified slightly, and certain questions deleted in the final version of the Biographical Information Form (<i>Appendix 16</i>).</p> <p>Recommendations made to determine content validity of both questionnaires by examining each question in relation to the 8 slots of the training session (planned for the experimental phase of the main study) as being primarily, secondarily, or more generally targeted (<i>Appendix 19</i>). Content validity was satisfactorily demonstrated, and validated together with the statistician.</p>

Table 4.7 (continued). Steps in the development and refinement of the pre-and-post questionnaires 1 and 2

QUESTIONNAIRE CONTENT	REFINING OF QUESTIONNAIRES	OUTCOME
	March 2005: Discussed statistical coding of pre-and-post questionnaires 1 and 2 with the statistician.	Both questionnaires coded differently to reliably reflect the pre-and-post questionnaire data for statistical interpretation. The final versions of the questionnaires were implemented with both the experimental and control groups during March and April 2005 (<i>Appendices 12 & 13</i>).
	March and April 2005: Administration of pre-and-post questionnaires 1 and 2	Pre-and-post questionnaires 1 and 2 administered during the main study (<i>Appendices 12 & 13</i>). Pre-post questionnaire 1 in conjunction with video scenario 1; and pre-post questionnaire 2 in conjunction with video scenario 2 (Table 4.6).
	August 2005: Formulation and evaluation of reliable confidence and skill constructs to be used in pre-and-post-questionnaire 1 and 2 administrations.	Reliable confidence and skill constructs formulated (Section 4.4.8), and defined and highlighted in Tables 4.8 and 4.9 below.

- a) Item analysis: Formulation of confidence and skill constructs on pre-and-post questionnaires 1 and 2

The questions on each pre-questionnaire were clustered to eventually form 2 constructs in relation to the pre-and-post questionnaires 1 and 2, namely the skill and confidence construct. These constructs were then used to assist in statistically determining a trend of responses in the experimental and control groups to the procedures of the main study.

To configure and evaluate the skill and confidence constructs, the following procedure was carried out on the pre-questionnaires 1 and 2:

- Initially the questionnaires 1 and 2 were examined for the most preferred answers to each questionnaire (as would be expected of a trained person). These answers were then coded into a 3-point grading - namely: 1 - *Least preferred*; 2 - *Unsure*; 3 - *Most preferred*.
- All questions on the 2 questionnaires were divided into 3 theoretical constructs (namely: confidence; skill; and insight). Item analysis was performed on these constructs, and the item-total correlations, as well as the Cronbach Alpha reliability coefficient, revealed the need to systematically clean them in order to increase their reliability and raise the Alpha coefficient.
- Certain questions on all 3 scales revealed a skew distribution (with a low item total correlation), reflecting how the group participants in the pre-questionnaire administration situation already gave the preferred answer. 6 questions (namely questions 11; 14; 15; 16; 17 and 18) were therefore omitted from the revised version of the constructs in pre-and post questionnaire 1; and 2 questions (namely questions 6 & 13) from the revised version of the constructs in pre-and-post questionnaire 2. The third construct (insight) was thereafter absorbed into the first and second constructs (confidence and skill respectively), thereby raising the Alpha coefficient, indicating that the 2 constructs were reliable.
- The 2 constructs used for the final analysis were the confidence and skill constructs, with questions from questionnaires 1 and 2 allocated to it respectively.

Table 4.8 defines the constructs as used in the current research, and describes the items of each construct on pre-questionnaire1, together with the means, standard deviations and alpha reliability coefficients in more detail, indicating the reliability of the construct. (More detailed definitions of these constructs were provided in chapter 1, Section 1.4).

Table 4.8 Questions comprising each of the constructs on pre-and-post questionnaire 1

CONFIDENCE CONSTRUCT			
Definition: Confidence in serving this kind of customer, and interacting with him/her with self assurance and boldness			
Question	Item Mean	Item Std Deviation	Item Construct Correlation
1) I would feel unsure about serving this customer	2.444	0.691	.78
2) I would want to avoid serving this customer as I would feel unconfident as to how best to deal with him	2.683	0.407	.69
7) I would feel frustrated that I didn't have better training to deal with this kind of customer	1.794	0.862	.65
20) I would feel comfortable sitting next to this customer on a bus or taxi	2.413	0.623	.59
Construct Mean: 2.333			
Construct Standard Deviation: 0.540			
Construct Alpha reliability coefficient: 0.595			
SKILL CONSTRUCT			
Definition: Skill in observing and responding to this kind of customer - including feelings regarding the customer's competence			
Question	Item Mean	Item Std Deviation	Item Construct Correlation
3) I would respond in the same way to this customer as he did in the video	2.063	0.853	.52
4) I would spend the same amount of time with this customer as he did in the video	1.667	0.762	.60
5) I would serve this customer quicker so that other customers in line could be served	1.730	0.832	.62
6) I would feel frustrated after serving this customer that I had taken so long to help him	1.698	0.750	.57
8) I would end this transaction quickly as the product was not available in the store	1.413	0.496	.51
9) The manager served this customer efficiently	1.508	0.536	.44
10) The manager will serve this customer in the same way at the end of the month when the store is very busy	1.952	0.744	.45
12) The manager should have been more patient and explained more of the difficulty he had in getting the product for this customer	1.619	0.776	.31
13) The manager coped well with this sales transaction	1.635	0.644	.41
19) It would be helpful for the customer to have someone with him to do his shopping	1.587	0.719	.26
Construct Mean: 1.687			
Construct Standard Deviation: 0.395			
Construct Alpha reliability coefficient: 0.606			

Table 4.9 defines the constructs as used in the current research, and describes the items of each construct on pre-questionnaire 2, together with the means, standard deviations and alpha reliability coefficients in more detail, indicating the reliability of the construct.

Table 4.9 Questions comprising each of the constructs on pre-and-post questionnaire 2

CONFIDENCE CONSTRUCT			
Definition: Confidence in serving this kind of customer, and interacting with him/her with self assurance and boldness			
Question	Item Mean	Item Std Deviation	Item Construct Correlation
1) Feel comfortable when approached by this customer	2.730	0.356	.57
2) Know what this customer would need to help make this an efficient transaction	2.746	0.221	.39
3) Assist this customer alone without asking other sales assistants to help me	2.238	0.848	.75
7) Feel frustrated that I did not have better training on how to serve this customer	1.905	0.912	.64
14) Feel comfortable sitting next to this customer on a bus or taxi	2.603	0.430	.58
Construct Mean: 2.444			
Construct Standard Deviation: 0.440			
Construct Alpha reliability coefficient: 0.535			
SKILL CONSTRUCT			
Definition: Skill in observing and responding to this kind of customer - including feelings regarding the customer's competence			
Question	Item Mean	Item Std Deviation	Item Construct Correlation
4) Spend the same amount of time serving this customer as the sales assistant did in the video	2.381	0.807	.54
5) Not feel comfortable asking the customer to repeat herself, even if I did not understand her	2.286	0.839	.46
8) Think the customer finds it hard to understand what the sales assistant is saying	1.571	0.721	.57
9) Think the sales assistant served this customer efficiently	2.683	0.439	.56
10) Think it would upset the customer if I asked her to write down what she was saying to me, instead of asking her to say it again	1.571	0.658	.49
11) Think the sales assistant coped well with the sales transaction in the video	2.524	0.599	.51
12) Think it would be helpful for the customer to have someone with her to do her shopping	2.159	0.895	.43
Construct Mean: 2.168			
Construct Standard Deviation: 0.423			
Construct Alpha reliability coefficient: 0.508			

vi) *Step 6: Development and refinement of a training session*

Between February 2003 and March 2005 the researcher compiled and refined the material comprising the once-off 4 hour training session that was held during the main study with the experimental group in April 2005 (*Appendices 20 - 28*). The training session was formulated within the time period allocated to the researcher by the supermarket region participating in the main study.

The preliminary input leading to the development and refinement of this training session included the following:

- Input by local and international experts from expert questionnaires sent out during step 3 of the pre-experimental phase of the research (June 2003). Input was specifically requested regarding the potential value of a training session, as well as specific suggestions for such a training session (Table 4.4).
- Review of limited relevant literature regarding published partner training programs within the acquired adult neurogenic field (Chapter 2, Table 2.1).
- Ongoing personal communication with various experts working with individuals with acquired brain injury (to determine the status of current local and international trends in training programs dealing with disability awareness specifically) including: Holland (2004); Kagan (2003); Sohlberg, (2004); Threats (2003); Togher (2003; 2004) and Ylvisaker (2004) (*Appendix 1D*).
- Examination of limited existing published corporate training programs, combined with e-mail correspondence worldwide (described in detail in chapter 3), together with personal communication with several local corporate consultants involved in training program development including: Coats (2004); Codrington (2004); and Mann (2004; 2005) (*Appendix 1B*). Findings revealed how in spite of worldwide legislative changes, relatively few published diversity programs exist that extend beyond awareness and removal of physical barriers in relation to interaction with individuals with a disability, providing further evidence of the need for the main study.
- Searched for already existing video material using individuals with a TBI specifically, to consider incorporating it into the developing training session. Resources personally contacted included among others: Brown (2004) (regarding the Iowa Department of Health's instructional video, *Pieces of the Puzzle, an Introduction to Brain Injury* (1999)); Sullivan (2003) (representing the New Hampshire Brain Injury Association); and Winslow (2004) (representing the South African Drive Alive Campaign) (*Appendix 1e*). In addition, professional websites consulted included: the American Occupational

Therapy Association (retrieved April 16, 2004 from <http://www.aota.org/>); the American Speech-Language Association (retrieved April 16, 2004 from <http://www.asha.org/default.htm>); the Australian Brain Injury Association (retrieved April 15, 2004 from <http://www.biausa.org/>); Brain Injury Australia (retrieved April 29, 2004 from http://www.braininjuryaustralia.com.au/home_.htm). Very few suitable videos were available, with none dealing specifically with interactions of customers with TBI in the retail environment, providing evidence in support of the need for the researcher to develop video material for use in the main study.

- The training session was developed and further refined to conceptually reflect and incorporate principles of adult learning and diversity awareness (Bornman, 2001; Franklin's disability awareness in a retail environment training manual, 2001; Mayo and DuBois, 1987a, 1987b, 1987c, 1987d, 1987e, 1987f, 1987g; Mintzberg, 2004; Roosevelt Thomas (with Woodruff), 1999a, 1999b, 1999c; Silberman, 1990; Slavin, 1996; Togher et al., 2004; Wastell, 1995) (described in detail in chapter 3). The focus of the training session was increasingly aimed at using material to facilitate the sales assistants' consideration of diverse ways of examining interactions with different kinds of customers, thereby increasing their confidence and skill in identifying the barriers to, and facilitators of sales transactions involving customers with a TBI (*Appendices 20 - 24*).

Given the paucity of suitable material for the main study, Table 4.10 highlights the material developed by the researcher to comprise a training session suitable for the current research aim:

Table 4.10 Material specifically developed for the main study

Collaborate with a Research Assistant with a TBI in the training session during the main study (<i>Appendixes 20 & 21</i>), to provide information to the experimental group participants about TBI (rather than using an informational video). Researcher assisted him in editing his script to be shared with the experimental group participants (<i>Appendix 20</i>).
Formulated a List of <i>Do's and Don'ts</i> in the retail environment when serving customers with a TBI (<i>Appendix 23</i>). This was based on in-depth examination of video scenarios; input from focus groups during the pre-experimental phase of the study (including expert questionnaire input (Table 4.4) and TBI focus groups (Table 4.2)); and overview of Franklins' disability awareness in a retail environment training manual (2001).
Formulated a template with a line drawing of the supermarket shopping bag for participants to write their own list of <i>Do's and Don'ts</i> (<i>Appendix 24</i>) (Kagan & Shumway, 2003g).
Development of a pre-and post-training Confidence Rating Scale (<i>Appendixes 25 & 26</i>), to obtain a subjective pre-and-post training measure of the participant's confidence in their ability to manage sales transactions involving customers with a TBI.
Development of a Training Session Evaluation Form (<i>Appendix 27</i>) in order to triangulate data (Mayo & DuBois, 1987b, 1987g).
Compiled a Certificate of Attendance to give to all research participants (<i>Appendix 28</i>), reflecting the participating supermarket chain's ethos of ongoing training of personnel at all levels of the company (Ackerman, 2002, 2005).

In summary, *Steps 4-6* described above reflect the material gathered in the process of developing and refining video scenarios; 2 pre-and-post questionnaires; and a 4 hour training session to be used in the main study.

vii) *Step 7: Pilot study*

a) Objectives

The objectives of the pilot study were to test the applicability of the training session and the questionnaires. The objectives; results and recommendations are described in detail in *Appendix 18*.

b) Context and participants

The pilot study was conducted at the Training Institute of the given chain store in the Gauteng region (a region adjoining the Northern region where the main study took place). The structure and function of each region within this supermarket chain is based on a national framework, so that piloting in the one region would reflect results comparable to the objectives of the main study. The researcher communicated with the Gauteng Regional Consumer Affairs Co-ordinator regarding the 4 hour long pilot study taking place in her region during January 2005. Although the researcher requested 8 participants in total, 5 participants were provided on the piloting day (2 were Customer Service Managers (CSM's), and 1 sales assistant serving in the Bakery, Deli

and Butchery sections respectively), fulfilling the criteria specified. All the sales assistants were female, literate, with an ability to speak and understand English at a minimum of Grade 8 level or above. For logistical reasons only 1 pilot session was provided to the researcher by the participating supermarket chain.

c) Procedure

- Prior to the commencement of the pilot session, the researcher introduced herself and asked the participants to sign a letter of consent to participate. In addition their permission was granted to use a tape recorder to tape the session.
- The viewing of 2 video scenarios (Videos 1 & 2; Table 4.6) by the participants with the 2 pre-questionnaires administered respectively (*Appendixes 12 & 13*), with the piloting of a 1½ hour sample (comprising 6 of the 8 slots) of the complete 4 hour training session to be used in the main study (Table 4.14).
- During the last hour, the same 2 videos were again shown to the 5 participants, and the same 2 post-questionnaires then completed (**Appendices 12 & 13**).

d) Pilot study: Objectives, results and recommendations

The objectives, results and recommendations made after the completion of the pilot study are provided in *Appendix 18*. In summary, after completion of the pilot study, minor modifications were made to the instructions given to participants before viewing the videos; to the questions on the biographical information; and to the format of the Training Session Evaluation Form. Results indicated that the pacing and time plan of the session were appropriate; the use of overhead transparencies, flipchart, and handouts was helpful; and questions in both pre-and-post-questionnaires, as well as instructions throughout, were considered unambiguous and clear to follow. The use of small groups to facilitate discussion among the participants was valuable; and the overall perception regarding the exposure to the training session was positive for all participants. Closer examination of the performance of all participants on the questionnaires in relation to parts of the training session they received revealed a correlation between the questions of the pre-and-post questionnaires and the components of the training session piloted. Pilot data reflected shifts in the participants' ability to identify barriers to, and facilitators of interaction with customers with a TBI (even after a brief training exposure, and with very little time in the before and after viewing of the videos accompanying the administration of the pre-post questionnaires), making it suitable for use in the main study.

4.4 Main study

4.4.1 Training context

One of South Africa's largest national retail supermarket chains was approached by the researcher for the implementation of both the pre-experimental phase and the main study of the current research, as a result of the perception that as a company, it is proactive in its responsibility towards both its employees and customers. The chain currently comprises 108 supermarkets countrywide, with over 40 000 employees (Ackerman, 2005), with 24 stores in the Northern region where the main study took place. Ackerman has noted how the core of the chain is founded on the "four legs of the table" principle (2005, p.47), where the leg representing consumer sovereignty lies on top, focusing on involvement with society, and having the right people-policies in place. Shortly after the fundamental changes that took place in the broader context of South Africa (with a new Government under President Mandela), this retail company likewise embarked on a fundamental change process called Vuselela or rebirth, aimed at inculcating a climate of dignity, respect and freedom amongst every employee of the company (Ackerman, 2005). The company today is based on a foundation of personnel training, ranging from structured on-the-job training to tertiary education, fostering pride in individual achievements that filter over to willing, courteous and efficient valued customer service (Ackerman, 2005).

4.4.2 Participant selection and description

The target for the main study was to select participants from 24 stores in the Northern region of the chain, comprising 13 stores in the Pretoria area; 3 stores in the North West Province; 4 stores in the Northern Province; and 4 stores in the Mpumalanga Province. Purposeful sampling was used to select all 24 CSM's and all 24 Customer Care Assistants (CCA's) in the stores to attend the training. They were randomly assigned to the experimental and control groups. An additional 22 sales assistants from the Deli and Bakery (frontline customer service areas of the store) were selected to participate, in order to create sufficient numbers in both the groups for statistical purposes. Table 4.11 reflects the participants in both the experimental and control groups who actually attended the first session of the main study, and their demographics.

Table 4.11 Participants and participant selection criteria

Participants	EXPERIMENTAL GROUP n = 31	CONTROL GROUP n = 33
Service level in supermarket * (<i>Appendix 29A</i>)	13 Customer Service Managers 11 Customer Care Assistants 7 Deli/Bakery sales assistants	8 Customer Service Managers 11 Customer Care Assistants 14 Deli/Bakery sales assistants
Average age (<i>Appendix 29B</i>)	38.3870 years (S.D. 9.3047)	41.9393 years (S.D. 8.9580)
Home language (<i>Appendix 29C</i>)	A variety of mother tongues spoken	A variety of mother tongues spoken
Perceived level of speaking English * (<i>Appendix 29D</i>)	26 Good 5 Average	24 Good 9 Average
Perceived level of understanding English * (<i>Appendix 29D</i>)	26 Good 5 Average	28 Good 5 Average
Literacy skills * (<i>Appendix 29E</i>)	31 literate	33 literate
Average length of time working for the company (<i>Appendix 29B</i>)	10.8710 years (S.D. 7.3518)	11.0606 years (S.D. 6.9997)

Key: * = participant selection criteria
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In spite of the arrangement for 35 participants to attend in order to comprise both the experimental and control groups respectively on the designated days of the 3 sessions of the main study, the attendance numbers fluctuated due to a variety of practical reasons including illness and transport problems. Table 4.12 reflects the number of participants actually attending each of the 3 sessions of the main study.

Table 4.12 Number of participants attending each of the 3 sessions of the main study

SESSION	EXPERIMENTAL GROUP PARTICIPANTS (n)	CONTROL GROUP PARTICIPANTS (n)
Session 1	30	33
Session 2 –Training	31	
Session 3	29	30

4.4.3 *Inter-group demographics*

Statistical examination of the demographic data of both the experimental and control group participants included the use of frequencies to examine both groups, and Fisher's Exact Tests were performed on the variables of gender; ability to speak and understand English; educational level; position in the Company; and knowledge of anyone with a speech problem. The Mann-Whitney U test was used to compare the distribution of age in number of years in both the experimental and control groups, and to examine number of years participants in both groups worked for the Company. All data, shown in *Appendices 29A –29F* revealed no statistical differences between these groups, emphasizing that they were well matched on these variables.

4.4.4 *Equipment*

The equipment used for the training of the sales assistants, data collection and analysis consisted of the following items:

- Laptop computer and Proxima projector
- DVD's comprising the video scenarios
- Overhead projector
- Transparencies and transparency pens
- Flipchart
- Pencils

4.4.5 *Measuring instruments used in main study*

In order to meet the requirements of the research question, the following measuring instruments were developed for use in the main study, and will be briefly described below:

4.4.5.1 Pre-and-post questionnaires 1 and 2

These questionnaires were developed and refined over a period of time (Table 4.7). Table 4.13 provides a description of the components and rationale for pre-and-post questionnaires 1 and 2 as used in the main study.

Table 4.13 Description of components and rationale for pre-and-post questionnaires 1 and 2

QUESTIONNAIRE	COMPONENTS	RATIONALE
Pre-and-post questionnaire 1 (Appendix 12)	21 questions – 20 closed-ended questions, and 1 open-ended question	Pre-and-post questionnaire 1 was administered after viewing video scenario 1 (Table 4.6), aimed at determining the confidence and skill of the participant in identifying the barriers to, and facilitators of interactions in a retail service encounter between a customer with a TBI and a sales assistant before and after a once-off training session (that was presented to the experimental group only).
Pre-and-post questionnaire 2 (Appendix 13)	15 questions – 14 closed-ended questions, and 1 open-ended question	Pre-and-post questionnaire 2 was administered after viewing video scenario 2 (Table 4.6), aimed at determining the confidence and skill of the participant in identifying the barriers to, and facilitators of interactions in a retail service encounter between a customer with a TBI and a sales assistant before and after a once-off training session (that was presented to the experimental group only).
Open-ended questions pre-and-post questionnaires 1 and 2 (Appendices 12 & 13)		The open-ended questions in both pre-and-post questionnaires 1 and 2 were used to explore further input from the respondents' perspective in their own words (Cummings et al., 2001), and to a lesser extent, to countercheck some of the other closed-ended questions, thereby controlling for bias in the development of the questionnaire (Bornman, 2001; Leedy, 1993).

4.4.5.2 Confidence Rating Scale: pre-and-post training

This 5 point scale was used as a subjective pre-and-post training measure of the participants' confidence in their own ability to serve a customer with a TBI before and after training (Appendices 25 & 26).

4.4.5.3 Training Session Evaluation Form

This short 2 page questionnaire evaluating the training session comprised the following: 8 questions about the content and methodology of the training session on a 3-point Likert scale from *Agree-to-Unsure-to-Disagree*; one question having the participant rate the overall value of the training session (on a scale of 1 (*poor*) - 5 (*very good*)); and an open-ended question asking the participant for comments and suggestions for further training (Appendix 27). The evaluation form aimed at obtaining the necessary information in as short a time as possible, particularly as it was completed at the end of a lengthy training session where the participants might have been fatigued (Bornman, 2001), and the input was considered useful to triangulate the data (Mayo & DuBois, 1987b, 1987g).

4.4.6 *Description of training session*

The training session developed for the current study broadly used the ICF (WHO, 2001) as the framework of reference targeting a system level change (Simmons-Mackie et al., in press) within the retail sector specifically. It aimed at having a group of sales assistants increase their confidence and skill at identifying the barriers to, and facilitators of a range of videotaped sales interactions with customers with a TBI. In so doing, the sales assistant would potentially shift from being a barrier to a facilitator, thereby potentially enhancing the participation of the customer with a TBI in the retail context.

Given the logistics of the functioning of a large retail company, and the aim of training sales assistants coming from large distances within a surrounding geographical region, only one day was allocated by the participating company for the training session to take place. Pre-and-post questionnaire 1 and 2 administrations, as well as the training session itself took place in the conference room of the company's Northern region support office in Pretoria - a spacious venue with comfortable seating, few distractions (Jarvis, 1995), and the technology to professionally support the training. In addition, the infrastructure existed to provide teas and lunches with ease to the participants.

The detailed training session is provided in *Appendix 21*. The researcher was assisted by a qualified SLP who took notes and assisted with all administrative needs during the training session. In addition, a 36 year old male research assistant with a TBI collaborated with the researcher throughout the training session. Krogh and Lindsay (1999); Mertens (1998); Oliver (1992) and Sohlberg et al. (1998) have likewise advocated the collaborative use of individuals with disabilities in research to generate knowledge and bring about personal and social change.

The overall focus of the training session was to use an interactive and active group participation format, together with the personal input of the co-trainer with a TBI, and various in-store meaningful video scenarios as examples, in order to systematically increase the confidence and skill of the participant in identifying the barriers to, and facilitators of interaction with customers with a TBI. Table 4.14 below provides a summary of the training session agenda, including the purpose, process, equipment and technical resources used to facilitate this. Slots used in both the pilot training session and the courtesy training session are reflected.

Table 4.14 Summary of the training session

SLOT & TIME	TRAINING SESSION CONTENT
Slot: 1a 10:00am (15 minutes)	Welcome and Introduction *  Brief introduction, followed by introduction of Research Assistants Marjan (SLP), and Derick (with a TBI). Derick to provide the group with a 5 minute overview (<i>Appendix 20</i>)
Purpose:	<ul style="list-style-type: none"> ▪ Set the context for the day ▪ Exposure to an individual with a TBI and experiencing more fully what they will be trying to understand during training ▪ Generate energy and anticipation
Process:	<ul style="list-style-type: none"> ▪ Participants seated in small groups at individual tables ▪ Introduction by researcher ▪ Researcher to introduce research assistant with a TBI - experiential training through exposure to an individual with a TBI
Equipment/ Resources:	Name labels.
Slot: 1b 10:15am (3 minutes)	Confidence Rating Scale :Pre-training (<i>Appendix 25</i>)
Purpose:	Obtain subjective pre-training confidence rating of participants' perceptions regarding their confidence in serving customers with a TBI
Process:	Researcher to guide group
Equipment/ Resources:	<ul style="list-style-type: none"> ▪ Confidence Rating Scale for each participant; pens
Slot: 2 10:18am (15 minutes)	<ul style="list-style-type: none"> ▪ Fable – the Giraffe and the Elephant (Roosevelt Thomas (with Woodruff) 1999c) * (<i>Appendix 22</i>) ▪ Researcher to read fable to group followed by discussion
Purpose:	Use fable as metaphor for participants to consider range of potential customers they may serve, and the possible barriers and facilitators needed
Process:	<ul style="list-style-type: none"> ▪ Researcher to discuss the fable ▪ Researcher to inform group of plan to consider dealing with a diverse range of customers in this session ▪ Brief small group discussion around the fable with feedback to whole group – question presented on overhead transparency to group
Equipment/ Resources	Overhead transparency with fable and question about the fable on it; group feedback; flipchart to record ideas
Slot: 3 10:33am (40 minutes)	Group consideration of shopping from a customer and sales assistants' perspective Small groups asked to consider the <i>barriers</i> (from both perspectives) when dealing with a customer with a TBI
Purpose:	<ul style="list-style-type: none"> ▪ More in-depth look by the groups of awareness from the customer and sales assistants' perspective of possible <i>barriers</i> intruding on sales transactions involving customers with a TBI

Table 4.14 (continued). Summary of the training session

SLOT & TIME	TRAINING SESSION CONTENT
Process:	<ul style="list-style-type: none"> ▪ 2 questions given to group for discussion within the small groups (Overhead transparency) ▪ Participatory / interactive problem solving group format ▪ 1 person per group to summarise group input and to present to whole group afterwards <p>Researcher to summarise input on flipchart regarding the possible range of difficulties an individual with a TBI may experience when shopping; and also the sales assistant when serving such a customer.</p>
Equipment/ Resources	Group feedback; overhead transparency with question on it; flip chart to record ideas
TEA 11:13am (15 minutes)	
Slot: 4 11:28am (60 minutes)	Use of video scenario (scenario 3) to consider barriers and facilitators when serving customers with a TBI* (Table 4.6)
Purpose:	<ul style="list-style-type: none"> ▪ Use of video scenario to facilitate discussion around their need to consider serving a diverse range of customers ▪ More in-depth look at group awareness concerning the <i>barriers and facilitators</i> (from both the customer and sales assistants' perspective) when serving a customer with a TBI
Process:	<ul style="list-style-type: none"> ▪ Participatory / interactive problem solving group format ▪ Show video scenario 3 of 2 customers with a TBI in a supermarket store ▪ Ask small groups to consider 3 questions while watching the video (questions on an overhead transparency) ▪ Discussion within small groups, and then presented to whole group for discussion ▪ Researcher to summarise on flipchart the <i>Do's and Don'ts</i> of such transactions ▪ Group discussion with Research Assistant Derick around issues of concern within the group regarding shopping for a customer with a TBI
Equipment/ Resources	Overhead projector with questions on it; group feedback; flip chart to record ideas
LUNCH (45 minutes) 12:28 pm	
Slot: 5 1:15pm (30 minutes)	Use of other video scenarios (scenarios 4 - 7) to consider barriers and facilitators when serving customers with a TBI (Table 4.6)
Purpose:	More in-depth look at group awareness concerning the <i>barriers and facilitators</i> (from both the customer and sales assistants' perspective) when serving a customer with a TBI
Process:	<ul style="list-style-type: none"> ▪ Participatory / interactive problem solving group format ▪ Show other video scenarios of a customer with a TBI in various supermarket stores ▪ Ask small groups to consider same 3 questions (as in Session 4) while watching the video (questions on an Overhead transparency) ▪ Discussion within small groups – and then presented to main group as an overview ▪ Group discussion with Research Assistant Derick around issues of concern within the group regarding shopping for a customer with a TBI

Table 4.14 (continued). Summary of the training session

SESSION & TIME	TRAINING SESSION CONTENT
Equipment/ Resources	Group feedback; overhead projector with questions on it; flip chart to record ideas
Slot: 6 1:45 pm (20 minutes)	Review list of <i>Do's and Don'ts</i>*[ⓐ]
Purpose:	<ul style="list-style-type: none"> ▪ Raising awareness among the participants of the barriers and facilitators within a sales transaction with a diverse range of customers, and with customers with a TBI in particular
Process:	<ul style="list-style-type: none"> ▪ Researcher to summarise group input on flipchart under the <i>Do's and Don'ts</i> of such transactions ▪ Researcher to review list on Overhead of <i>Do's and Don'ts</i> (including input from pilot study) (<i>Appendix 23</i>)
Equipment/ Resources	Group feedback; overhead projector with list of <i>Do's and Don'ts</i> on it
Slot: 7 2:05pm (10 minutes)	Integration of Material Covered
Purpose:	<ul style="list-style-type: none"> ▪ Opportunity to integrate issues raised in order to feel more confident when serving customers with a TBI
Process:	<ul style="list-style-type: none"> ▪ Review all flipcharts of the list of potential problems (from the customer and sales assistants' perspective) regarding a sales transaction involving a customer with a TBI
Equipment/ Resources	Flip chart; group feedback
Slot: 8a 2:15pm (30 minutes)	Summary and Formulation of personalised list of <i>Do's and Don'ts</i>*[ⓐ]
Purpose:	<ul style="list-style-type: none"> ▪ Opportunity to summarise and integrate issues discussed in order to develop a handy list of possible tips when serving customers with a TBI
Process:	<ul style="list-style-type: none"> ▪ Group participants to write down useful tips (<i>Do's and Don'ts</i>) they each want to remember on a piece of paper with a template representing a supermarket shopping bag (<i>Appendix 24</i>) ▪ List of tips to be laminated later by the researcher for each participant to refer to afterwards in the stores ▪ Closing overview by researcher, with a few closing words from Research Assistant, Derick
Equipment/ Resources	Overhead transparency of template of shopping bag; flip chart; group feedback
Slot: 8b 2:45pm (3 minutes)	Confidence Rating Scale : Post-training (<i>Appendix 26</i>)
Purpose:	<ul style="list-style-type: none"> ▪ Obtain subjective post-training confidence rating of participants' perceptions regarding their confidence in serving customers with a TBI.
Process:	<ul style="list-style-type: none"> ▪ Researcher to guide group
Equipment/ Resources	Confidence Rating Scale for each participant; pens

Table 4.14 (continued). Summary of the training session

SESSION & TIME	TRAINING SESSION CONTENT
Slot: 8c 2:48pm (10 minutes)	Training Session Evaluation Form * (<i>Appendix 27</i>)
Purpose:	<ul style="list-style-type: none"> ▪ To obtain a measure of the value of the session to triangulate data, as perceived by the group participants
Process:	<ul style="list-style-type: none"> ▪ Researcher to guide group – and have them complete a Training Session Evaluation Form
Equipment/ Resources	Training Session Evaluation Form for each participant
Slot: 8d 2:58pm	<i>Certificate of Attendance from the University of Pretoria given to all participants including the Research Assistants</i> (<i>Appendix 28</i>)
END OF TRAINING SESSION 3:00 PM	

Key: * = Sessions used in the pilot training session
▣ = Sessions used in the courtesy trainingsession

4.4.7 Data collection procedures

4.4.7.1 Specific considerations

During the collection of data, in order to ensure reliability and ecological validity, specific considerations had to be taken into account including:

- a) The Hawthorne effect: This has been described by Mertens (1998) as one of 10 factors that might influence ecological validity – “some behavioural change as a result of awareness of being a subject in an experiment” (Adair, 1984, p. 335). Adair refers to numerous variables potentially mediating this Hawthorne effect, including: prestige from being selected; special attention by being in an experimental group; change in routine or novelty associated with the experimental program; team work; heightened attention to the task and motivation accompanying the testing situation; and clear performance expectations. To minimize the Hawthorne effect in the current study (Adair, 1984; Bornman, 2001; McMillan & Schumacher, 2001; Mertens, 1998; Sohlberg et al., 1998) the researcher requested that all sales assistants participating in the in-store videotaping try to be as natural as possible in their sales transactions while being videotaped. While all

participants in the pre-questionnaire administration session (Session 1, Table 4.1) were informed in the pre-questionnaire instructions that they were participating in a research project (*Appendix 14*), no other information was provided about further training being implemented for certain participants, until the end of that session when they had all completed their questionnaires. In addition, all participants were told before completing the pre-and-post questionnaires that there were no correct or incorrect answers.

b) In an endeavour to minimize the John Henry effect or compensatory rivalry (McMillan & Shumacher, 2001), control groups participants were told (in the post-questionnaire administration session (Session 3, Table 4.1) that they would be receiving a courtesy training session at the end of that session.

c) All preparatory and pre-experimental data gathering took place in stores in the Gauteng region of the retail supermarket participating in the current research, while all sessions of the main study took place in a different region - the Northern region of the same company. In so doing, an effort was made to ensure lack of exposure of the experimental and control group participants to any component of the research before the main study began.

d) The Research Assistant with a TBI was only present during the training session (Session 2 of the main study), and not during Sessions 1 and 3, in order to ensure that his presence did not cause bias in the responses of either the experimental or control groups in their pre-and-post questionnaire completion in either Sessions 1 and 3 respectively (Table 4.1).

e) The researcher edited the script for the Research Assistant with a TBI, and discussed with him in advance the collaborative role he would take during the training session, so that his input throughout was controlled and well paced rather than over-intrusive and time consuming.

f) Every effort was made to keep the questionnaires as short and manageable as possible, so that all the participants would cope with viewing both video scenarios and completing both questionnaires in the same session. In addition to the pilot study, the language used in both questionnaires was reviewed by the management of the supermarket store to ensure that all participants would cope with the instructions and questions in both questionnaires.

4.4.7.2 General procedures

The procedure used during the preparatory, pre-experimental phase and the main study was as follows:

- a) Consent for the research was obtained from the General Manager (GM) Northern Region of the chain store in question. After an initial presentation to him during April 2003, ongoing meetings and contact took place with him and his assistant, the Consumer Affairs Co-ordinator, Northern Region (until April 2005) in person, telephonically, and through regular e-mails, in order to co-ordinate both the preparatory and pre-experimental phases in another region (namely the Gauteng Region), as well as the main study in the Northern region.
- b) The pre-experimental phase of the research comprised 7 steps (Table 4.1). In the first 3 steps, 4 focus groups participated in a needs analysis, in order to determine perceptions concerning barriers and facilitators in retail encounters, for sales assistants serving customers with a TBI, as well as for the customer. The groups comprised 2 groups of individuals with a TBI; a group of sales assistants (working in the same supermarket chain but in another geographical area from where the main study took place); as well as a group of experts working in the field of adult brain injury (who completed a questionnaire). In the 4th step, video scenarios were developed. Information gained from the first 3 steps, together with ongoing discussion with colleagues were used to video, refine and edit the in-store videos (taken by a professional videographer and his team) for use during the main study. 7 video scenarios were finely edited – 2 for use in the administration of pre-and-post questionnaires; and 5 for training purposes during the main study. In the 5th and 6th steps, combined input from the focus groups; ongoing discussion with colleagues, together with literature reviews resulted in the development and refinement of 2 questionnaires, as well as a 4 hour training session to be used during the main study.
- c) March 2005: The pilot study took place in the Gauteng region of the same supermarket chain to test the applicability of the questionnaires and the training session. Minor modifications were considered necessary as a result of this process.

- d) March – April 2005: The main study took place in the Northern region support office in Pretoria, and the researcher was assisted throughout all three sessions by a qualified SLP (*Appendix 21*).

Figure 4.2 illustrates these different sessions of the main study, and is an extension of Table 4.1. An overview of these sessions is then provided below.

SESSION	DESCRIPTION
Session 1	Pre-questionnaire 1 and 2 administration: To identify the confidence and skill of sales assistants (in both the experimental and control groups) in identifying barriers to, and facilitators of interactions involving customers with a TBI (as shown in video scenarios 1 and 2 respectively).
Session 2 (2 weeks later)	Training the experimental group to increase their confidence and skill in identifying such barriers and facilitators (assisted by a research assistant with a TBI).
Session 3 (2 weeks later)	Post-questionnaire 1 and 2 administration: To identify the confidence and skill of sales assistants (in both the experimental and control groups) in identifying barriers to, and facilitators of interaction involving customers with a TBI (as shown in video scenarios 1 and 2 respectively).

Figure 4.2 Three experimental research sessions in the main study.

- i) Session 1: March 2005

This commenced with the experimental and control groups combined, meeting with the researcher for an hour-and-a-half to view 2 videos (video scenarios 1 & 2 (Table 4.6)), and thereafter complete pre-questionnaires 1 and 2. The aim of this session was to determine the confidence and skill of the participants in identifying barriers to, and facilitators of interactions with customers with a TBI in sales interactions before a once-off training session for the experimental group participants (Figure 4.3).



Figure 4.3 Session 1: Experimental and control groups combined.

ii) Session 2: April 2005

The training session (*Appendix 21*) took place exactly 2 weeks later with only the experimental group participating. A Research Assistant with a TBI collaborated with the researcher in this session, and discussed issues related to TBI and shopping with the group participants (Figures 4.4 and 4.5). By means of using an interactive small group format with meaningful video scenarios and overhead material to facilitate lively discussion, the 4 hour training session (comprising 8 slots) aimed to provide a range of opportunities for the participants to identify barriers to, and facilitators of a range of sales interactions with customers with a TBI with greater confidence and skill. Participants were asked to rate their confidence in serving a customer with a TBI before and after training, and to fill in a template representing a supermarket shopping bag with their own personal list of *Do's and Don'ts* (laminated by the researcher for them to take home). In addition, all participants were asked to complete a Training Session Evaluation Form at the completion of this session.



Figure 4.4 Session 2: Research assistant with a TBI sharing issues related to TBI and shopping with the experimental group.



Figure 4.5 Research assistant with a TBI answering questions during the training session.

iii) Session 3: April 2005

The same procedure as described for Session 1 was repeated, which took place exactly 2 weeks after Session 2 (and 4 weeks after Session 1). The Research Assistant with a TBI was not present

during this session. At the end of this session, all participants were presented with a Certificate of Attendance from the University of Pretoria. In addition, experimental group participants were given their personalized laminated supermarket bags to keep for their own future use.

iv) Courtesy training session

Immediately after the end of Session 3, the control group participants stayed on for an hour-and-a-half long Courtesy Training session comprising the same program used in the pilot study and identified in Table 4.14. Participants were exposed to five parts of the full training session (used in Session 2) to provide them with confidence in identifying barriers to and facilitators of interactions involving customers with a TBI. At the end of this session, all participants were presented with a Certificate of Attendance from the University of Pretoria (Figure 4.6). The researcher was assisted by both the Research Assistant Derick, and the qualified SLP.



Figure 4.6 Control group participants displaying their Certificates of Attendance.

- e) At the end of each phase the researcher encoded all the measuring instruments.
- f) The encoded data was then captured, checked by the researcher for any capturing errors, and the statistical analysis commenced. Finally the interpretation of results followed.

4.4.8 Data analysis and statistical procedures

A pre-designed column marked “*For official use*” was placed on the right-hand side of all the measuring instruments, for encoding the raw data. This was encoded by the researcher according to the data definitions.

All data were computerized for statistical analysis with the SAS and BMDP3D Statistical Software packages. The results were then analyzed using a variety of statistical procedures, listed in Table 4.15 below, and were presented in tables, as well as bar graphs where appropriate (Bornman, 2001).

Table 4.15 Statistical procedures used in the main study

STATISTICAL PROCEDURE	RATIONALE
Discrete frequency distributions calculated for all variables on all 3 measuring instruments.	Listing and counting variable values every time they occurred to organize the data for interpretation (McMillan & Schumacher, 2001).
Mean scores and standard deviations (STD) calculated where applicable.	Information on average of all scores and average variability of the scores (McMillan & Schumacher, 2001).
Cronbach Alpha Reliability coefficient as part of the item analysis.	Reliability estimate – most appropriate for survey and questionnaire research where there is a range of possible answers for each item (McMillan & Schumacher, 2001).
Chi-square test; Fisher’s Exact Test.	Compare nominal data sets in the form of frequencies, and ordinal data such as percentages, to test the statistical independence of 2 variables (McMillan & Schumacher, 2001; Mertens, 1998).
Effect size.	Uses means to compare an experimental and control group, and to indicate any practical significance of the difference between the 2 group means (Mertens, 1998).
Mann-Whitney U test.	2 independent samples (Mertens, 1998).
Wilcoxin Test.	Used with 2 related samples (Mertens, 1998).

4.5 Summary

This chapter described the methodology used in the study. It discussed the aim of the research, the sub-aims and the research design. The preparatory phases laying the foundation for the main study were presented, followed by the pre-experimental phase, together with a description of the pilot study, highlighting some minor modifications necessary for use in the main study. The main study was then described, including a description of the training context; participants; equipment; measuring instruments; the training session; data collection and procedures used for the research. Finally, data analysis and statistical procedures were described.