

## **3. Research Methodology**

### **3.1 Introduction**

This chapter focuses on the methodology utilised in the research project and includes the research framework. It describes the methodology used in the study, and offers an explanation for the use of qualitative research rather than quantitative research. It offers a description of case study research and grounded theory, as used in this study. The chapter also examines the means of data collection and provides a rationale for this approach. The issues of reliability and triangulation of data are then discussed, followed by the means of data analysis employed. The relevance of validity, both internal and external is referred to, together with consideration of the ethical issues connected to the project.

### **3.2 Research Framework**

The following research framework has been included to show how data were collected and then analysed. This framework deals with the content of the investigation and the data collection methods utilised to collect this information. The research occurred over three different phases, each phase possessing a specific role in the project. These phases are described below.

#### Phase One – What was currently happening?

This phase can be likened to a reconnaissance; it gave me the opportunity to investigate a number of areas, including:

- the types of literacy practices that the Kindergarten students were involved in at the commencement of their formal schooling (by enquiring about the family literacy events);
- the opinions held by the previous year's Kindergarten families about the connections between the school and families in regards to the students' literacy learning;
- how the Principal felt about the current connections between families and the school, with concern given to the way in which the school staff communicated about the students' literacy development; and
- consideration of the needs of the current Kindergarten parents; what did they wish to be informed about in regards to their children's literacy development?

Phase One also possessed a level of analysis which, once completed, enabled me to conduct Phase Two of the research. Data were analysed so that I could devise relevant activities for the Kindergarten students, which were informed by information collected about their family literacy events, and in turn family literacy practices. Data collected from the parent participants gave me some insight into the existing connections with the school as well as what parents wished to be informed about.

#### Phase Two – Strengthening the bonds between families and the school

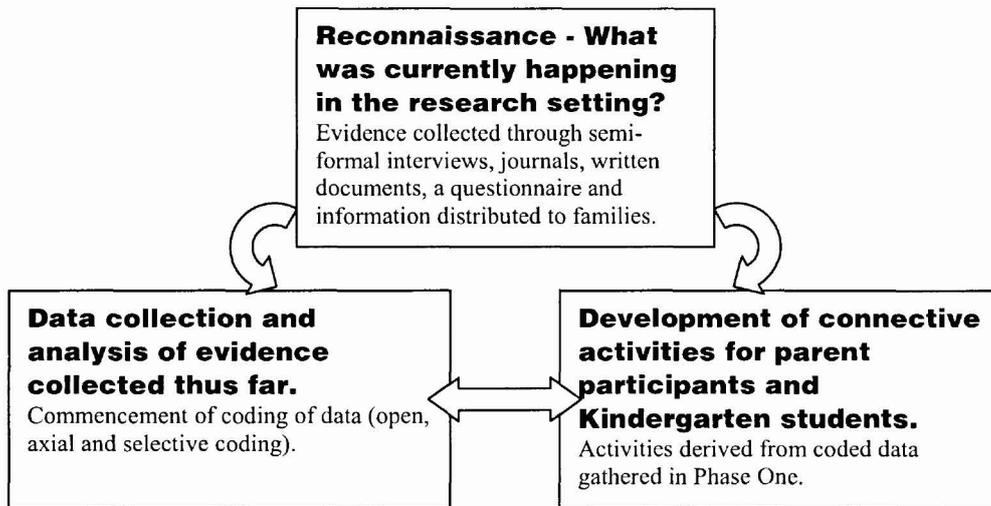
Foremost, this phase concerned designing and implementing activities with both the student and parent participants that were based on information collected in Phase One of the research. Data were collected throughout this implementation stage for later analysis. This connective program is outlined and described in Chapter Five.

### Phase Three – Reflection on the implemented activities

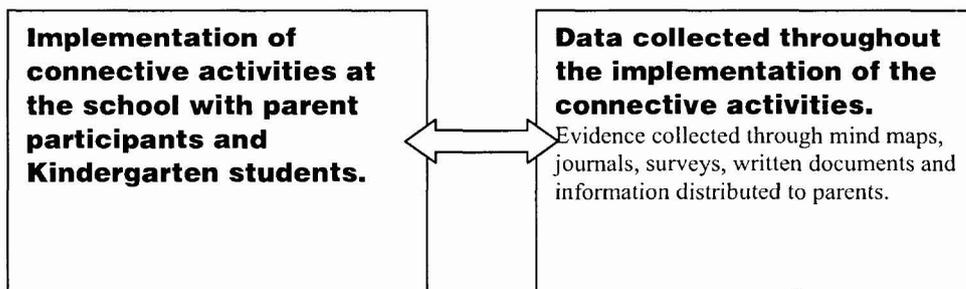
This phase completed the cycle of research and involved analysis of the data gathered from all participants. It enabled me to evaluate the responses about the implemented activities held by the teaching staff, Kindergarten students and parent participants. It gave me a lead-in to consider what may or may not be successful in future attempts to strengthen the bonds between a school and the families of children who attend the school.

The next page has a diagrammatic overview of the previously described three phases of research.

## Phase One



## Phase Two



## Phase Three

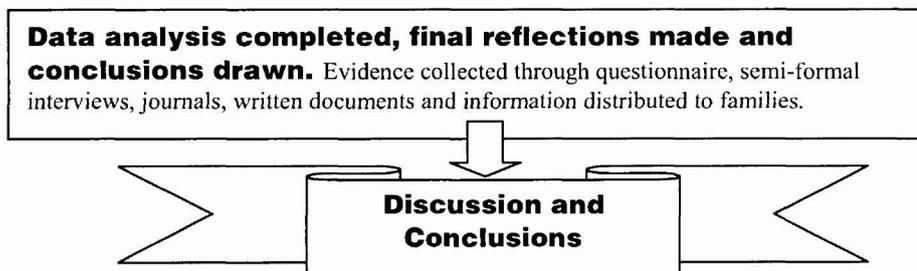


Diagram 3.1: Diagrammatic Overview of the Research Framework

### **3.3 The Research Methodology Employed in this Project**

In this particular instance the setting of the research was a small rural school and due to this setting, it may be regarded as an example of educational research. Ary, Jacobs and Razavieh (1990:22) described educational research as “the way in which one acquires dependable and useful knowledge about the educative process.” It may also be described as an example of social research, as the project endeavoured to examine certain individuals and groups in our society. Neuman (2006:2) described social research as “a type of research conducted by sociologists, social scientists and others to seek answers to questions about the social world.” Because of the nature of inquiry attached to this particular research project it was most appropriate to utilise research methodologies from the qualitative research paradigm.

#### **3.3.1 The Selection of the Qualitative Research Paradigm and Rejection of the Quantitative Research Paradigm**

It may be suggested that one of the main goals behind this research project was to describe the connections which existed between a small rural school and its Kindergarten families, as well as the effects which these connections had on the participants. Bogdan and Taylor (1975:4) stated that “qualitative methodologies refer to research procedures which produce descriptive data: people’s own written or spoken words and observable behaviour.” Strauss and Corbin (1998:11) extended this description of qualitative research by suggesting that qualitative research is “about persons’ lives, lived experiences, behaviours, emotions, and feelings, organisational functioning, social movements, cultural phenomena and interactions between nations.”

Qualitative research can also be referred to as research belonging to the interpretive paradigm. In regards to this paradigm Cohen, Manion and Morrison (2000:22) stated that

the central endeavour in the context of the interpretive paradigm is to understand the subjective world of human experience. To retain the integrity of the phenomena being investigated, efforts are made to get inside the person and to understand from within. The imposition of external form and structure is resisted, since this reflects the viewpoint of the observer as opposed to that of the actor directly involved.

By gathering data from the participants I aimed to tell their stories, their experiences, and express their opinions and views associated with literacy learning both in the home and school setting.

In comparison to the qualitative research paradigm, the quantitative research paradigm requires researchers to rely on a positivist approach to social science and speak in a language of variables and hypotheses (Neuman, 2006:151). In regards to the positivist approach Cohen et al. (2000:27-28) stated that “positivism strives for objectivity, measurability, predictability, controllability, patterning, the construction of laws and rules of behaviour, and the ascription of causality.” The above quote illustrates the tight structure and control held over the research situations which adopt the quantitative approach. Duffy (1984 in Leedy, 1993:144) highlighted the element of objectivity in quantitative research and reported that “the quantitative researcher attempts to arrive at an understanding of facts from the outsider’s perspective by maintaining a detached, objective view that, hypothetically, is free from all bias.” Whilst this approach may suit other research projects this project required close work with the participants, in order to gain an insight into their views about literacy development. The research questions which

were created to describe the stories and experiences of the participants were more suited to the qualitative paradigm of research.

As a final means of presenting the difference between the qualitative research paradigm and the quantitative research paradigm Table 3.1 has been included, which has been adapted from Neuman (2006).

**Table 3.1: Quantitative versus Qualitative Approaches** (Neuman, 2006:13, sources: Creswell, 1994; Denzin & Lincoln, 2003; Guba & Lincoln, 1994; Marvasti, 2004, Mostyn, 1985; Tashakkori & Teddlie, 1998)

Quantitative Approach	Qualitative Approach
<ul style="list-style-type: none"> <li>• Focus on variables</li> <li>• Reliability is key</li> <li>• Theory and data are separate</li> <li>• Independent of context</li> <li>• Many cases, subjects</li> <li>• Statistical analysis</li> <li>• Researcher is detached</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on interactive processes, events</li> <li>• Authenticity is key</li> <li>• Theory and data are fused</li> <li>• Situationally constrained</li> <li>• Few cases, subjects</li> <li>• Thematic analysis</li> <li>• Researcher is involved</li> </ul>

For me, the above table highlights the fact that even the setting and the number of participants involved in this study indicated that research within the qualitative paradigm was most appropriate for this particular setting.

### 3.3.2 The Selection of Case Study Methodology

As determined in Section 3.3.1 the nature of enquiry for this project determined the use of data collection and analysis from the qualitative research paradigm. However, it is also

necessary to discuss the methodology used to collect the data. The story of each Kindergarten student's experiences associated with family literacy practices, as well as the school's story of how it communicated with families about literacy development and how it incorporated family literacy practices into the literacy program were significant. It was also significant to consider the fact that very few participants were required in the research project. The case study methodology was seen as being the most appropriate style of research. Punch (2005:144) revealed that:

In keeping with other approaches in qualitative research, the case study aims to understand the case in depth, and in its natural setting, recognizing its complexity and its context. It also has a holistic focus, aiming to preserve and understand the wholeness and unity of the case.

By using the case study methodology I was able to examine the research setting in a comprehensive manner, as it enabled me to simply report what was found at the school and directly describe how the participants felt about the research topic: case study research necessitated that I relay exactly what I observed.

Yin (1994:14) suggested that case study should not be confused with qualitative research, as case study research can incorporate both quantitative and qualitative evidence. Neuman (2006:40) also revealed that case study and qualitative research are not identical, but does point out that most case studies do use a qualitative approach (2006:41), as this research project does.

Research was conducted primarily in a small rural school, which provided a unique setting for the project. It was unlikely that another setting would be found which

possessed the same, or indeed very similar, participants or context. The case study approach also suits research which has a distinctive setting: “contexts are unique and dynamic, hence case studies investigate and report the complex dynamic and unfolding interactions of events, human relationships and other factors in a unique setting” (Cohen et al., 2000:181). However, one may argue that the “uniqueness” of the research setting limits generalisations to be formed in the results and conclusions of the research study. In regards to these circumstances Stake (1995:8) stated that

we do not choose case study designs to optimize production of generalizabilities. More traditional comparative and correlational studies do this better, but valid modification of generalization [sic] can occur in case study.

Therefore, this case study research did not aim to formalise any new theories which could be adapted to other settings, but rather aspired to add to and further develop those existing theories associated with primary and secondary Discourses and literacy development of young children.

Four case studies were conducted, one for each Kindergarten student enrolled in the school and one related to the school’s experiences of connecting with families about the students’ literacy development. Hence, this case study research may be regarded as being a multiple-case study (Yin, 1994:14) or a collective case study (Stake, 1994 in Punch, 2005:144). By researching more than one Kindergarten student’s experiences with literacy development, both at home and at school, I was gaining a greater insight into: 1) the diverse types of literacy-based experiences students were involved in whilst with their families; 2) how the students and their family felt in regards to the existing

communications with the school about literacy development; and 3) their responses to the connective program implemented to strengthen the current bonds between home and school.

### **3.3.3 Incorporation of Grounded Theory**

Whilst the aim of my project was to create four comprehensive case studies the research strategy of grounded theory was also intertwined into the study's design. In grounded theory the aim is to generate theory rather than to have hypotheses formulated at the beginning of the project. As Punch (2005:157-158) stated: "The research does not start with a theory from which it deduces hypotheses for testing. It starts with an open mind, aiming to end up with a theory". Hence, whilst I knew at the beginning of the research that I wanted to investigate the relationship between students' homes and the school in regards to literacy development, I did not have any hypotheses to prove or disprove.

### **3.3.4 Reasons for the Rejection of Other Methodologies**

As previously discussed this research project suits the mechanics of the qualitative research paradigm, as opposed to the quantitative research paradigm (see Section 3.3.1). However, it is necessary to examine why other research approaches were rejected in preference to case study and grounded theory research.

### **Experimental Research**

A popular form of research design is research which possesses an element of experimentation. Cohen et al. (2000:211) stated that "the essential feature of experimental

research is that investigators deliberately control and manipulate the conditions which determine the events in which they are interested.” Whilst there were particular events in my research setting that I was interested in, I did not require any control over the events, as I aspired to relay these events as they naturally occurred.

### Nonreactive Research

This form of research arises when the participants or units of study are not aware that information about them is being used in a research study (Cohen et al., 2000:44). All of the participants were aware that they were to be involved in my research project, as I sought their permission to collect data from them prior to the commencement of the study. In nonreactive research it is the researcher’s role to study evidence about the social actions and behaviours which have been left behind by those being observed (Cohen et al., 2000:321). Apart from examining such documentation as school reports it would have been impossible for me to collect data about the participants’ experiences with primary and secondary Discourses and literacy development without their knowledge.

### Action Research

Initially I considered the creation of an action research project in line with the theme of families and schools, how they connected with one another and how these connections could be strengthened. Punch (2005:160) highlighted the fact that action research’s “whole purpose is to lead to action to solve [a] practical problem or answer [a] practical question.” The purpose of my research project was simply to identify the experiences of a school, parents and students’ involvement with primary and secondary Discourses

(literacy development at home and at school) and the relationship between the two. A specific problem or question was not identified at the commencement of the study.

#### Historical-Comparative Research

Historical-comparative research can investigate social life in either a past historical era or across different cultures (Neuman, 2006:46). Obviously this style of research also did not suit my research project, as I was concerned with examining a situation occurring in the present day, and dealt with one particular culture. The data which was collected throughout my research project was based on current events and opinions of the participants. Cohen et al. reported how the main difference between historical and other forms of research is that historical research deals with data which already exists (2000:160). In order to complete the four case studies found in this research study I needed to collect current data.

#### **3.3.5 Selection of Case Study Participants**

It is imperative to note that the research setting itself played a role in deciding who would be invited to participate in the research project: a small rural school has both limited teaching staff and students but this, it may be argued, forms the very basis of why the study is so unique. As the researcher I knew that I wanted to study a group of students who only had limited experiences with school literacy practices, and had more involvement with the literacy practices found in their homes. Hence, the most logical group of students to examine was the newly enrolled Kindergarten class of 2004. Due to the desire to research these students, purposive sampling was utilised in this research

study, which means the sample was selected in a specific way and had a purpose or filled a specific need (Cohen et al., 2000:103; Punch, 2005:186).

Neuman (2006:222) revealed that another reason why purposive sampling may be employed is because “a researcher wants to identify particular types of cases for in-depth investigation. The purpose is to gain a deeper understanding of types.” This notion appears to tie in with the methodology of case study; a unique situation is to be investigated, hence, specific cases or samples are drawn upon.

Because I wanted to research the literacy experiences of students with limited exposure to school literacy practices and the project was to commence at the beginning of the 2004 school year, the most appropriate group of students to invite as case studies were the Kindergarten students of Sunnyvale Public School. As the research was set in a small rural school, this limited the number of students to be considered as participants, but it may be argued that this in itself makes the research unique; smaller class sizes meant smaller options for case study participants.

In 2004 at Sunnyvale Public School there were three students enrolled in Kindergarten, each coming from a dissimilar family background. This situation gave a fresh insight into the various types of family literacy practices which occur in Australian homes. All three Kindergarten families decided to participate in the project and so allowed me to construct three student case studies and a description of each student is included in Chapter Four. Data collected from myself and the school’s Principal formed

the case study about the school. Parents who had Kindergarten students during the 2003 school year (parents of 2004 Year One students) were interviewed during Phase One of the research and were also invited to attend the literacy morning teas which were held in Phase Two. When they attended such a morning tea the Year One Parents were then asked to complete a survey about the event, as were the attending Kindergarten parents. The data collected from the 2004 Year One parents did not form a separate case study, but were used to answer research question two, which examined how a small rural school connects with parents. The Year One parents were important participants of the project as they informed me about their Kindergarten child's school literacy development in the previous year (2003) and the analysis of their semi-formal interviews helped with the creation of the connective program.

### **3.4 The Role of the Researcher in this Project**

During 2004 I was employed by Sunnyvale Public School as the temporary teacher. Due to this arrangement and the fact that I conducted the research project myself, my role in the research was as a researcher participant and a teacher – researcher.

Neuman (2006:387) reported that Gans (1982) used the term *researcher participant* as a means of combining the terms *observer as participant* (researcher is known from the beginning but has limited contact with the participants) and *participant as observer* (researcher is overt and very close to the participants). I believe that Gans' use of the term *researcher participant* describes my role in this research project because I was familiar with all participants as a teacher, not as a close friend. Secondly, whilst there were instances when I was directly involved in the actions observed as data collection, such as

the implementation of the literacy morning teas, there were occasions when I was absent from the action, such as the execution of family literacy events in the students' homes.

In regards to participant observational studies, Punch (2005:182) declared that participant observation "differs from direct or non-participant observation in that the role of the researcher changes from detached observer of the situation, to both participant in and observer of the situation." I believe that being a teacher-researcher enabled me to do just this; both participate in the activities which I was implementing, as well as observe participants' reactions to these activities.

### **3.5 Data Collection during the Three Phases of Research**

Data were collected in all three phases of research, as this allowed me to establish four well-developed case studies: one about each Kindergarten student and one about the school. Table 3.2 describes the various means of data collection in each of the different research phases.

**Table 3.2: Data Collection and Sources of Evidence**

<b>Occasions when Data Collection Occurred</b>	<b>Sources of Evidence</b>
<p>Research Phase One</p> <p><i>What were the existing connections?</i></p>	<ul style="list-style-type: none"> <li>• semi-formal interviews with Year One parents (2003 Kindergarten parents) and Sunnyvale Primary School Principal</li> <li>• written questionnaire completed by Kindergarten parents</li> </ul>
<p>Research Phase Two</p> <p><i>Implementation of the connective program</i></p>	<ul style="list-style-type: none"> <li>• mind maps based on classroom discussions with Kindergarten students</li> <li>• literacy morning tea survey for Kindergarten parents and interested Year One parents</li> <li>• <i>Literacy Link</i> newsletters</li> </ul>
<p>Research Phase Three</p> <p><i>Data analysis completed, final reflections made and conclusions drawn</i></p>	<ul style="list-style-type: none"> <li>• written questionnaire for Sunnyvale Public School Principal</li> <li>• semi-formal interviews with Kindergarten parents and Kindergarten students</li> <li>• final literacy morning tea survey Kindergarten parents and interested Year One parents</li> </ul>
<p>Data Collection Occurring in All Three Phases</p>	<ul style="list-style-type: none"> <li>• written documents from the Sunnyvale Public School and Kindergarten students</li> <li>• classroom and Kindergarten family literacy journals</li> <li>• research project information distributed to families</li> <li>• information distributed to families by Sunnyvale Public School</li> </ul>

### **3.5.1 Explanation of Data Types Collected throughout the Project**

#### Data Collection in Phase One

1. Semi-formal Interviews with Year One parents – conducted in Phase One as a means of establishing what had occurred in their children’s Kindergarten year (see Appendix 2).

2. Semi-formal Interview with Principal – to collect data about the school’s current stance about home-school connections (see Appendix 3).
3. Questionnaire for Kindergarten Parents – as a means of collecting data about what type of literacy activities their children were involved in at home prior to and at the commencement of the study. The survey also gave me an indication into some possible themes for the literacy morning teas, which were held with the parent participants (see Appendix 6).

#### Data Collection in Phase Two

1. Mind maps – in order to summarise class discussions held with the Kindergarten students’ mind maps were scribed by myself, using the comments and views expressed by the children.
2. Literacy Morning Tea Survey – this survey was completed by Kindergarten and Year One parent participants who attended the term three literacy morning tea (see Appendix 7). Although the literacy morning teas had initially been designed with the Kindergarten parents in mind, after interest was shown by one of the Year One parent participants I invited the Year One parents to come along as well. Participants were asked to complete the surveys so that I could gather data about how parents felt about the information distributed during the morning teas.
3. *Literacy Link* Newsletters – a newsletter sent home to all families of the school. The newsletter relayed an overview of what had been happening in the classroom in regards to literacy learning, as well as provided examples of the students’ work (see Appendix 21 & 22).

### Data Collection in Phase Three

1. Questionnaire for Principal – used as a means of collecting the viewpoint of the Principal about the overall research project, as well as any concluding comments she may have had (see Appendix 9).
2. Semi-formal Interviews with Kindergarten Students – These interviews were conducted so that I could gain a child’s perspective about the activities which had been implemented to promote primary Discourse activities in a secondary Discourse environment (see Appendix 5).
3. Final Literacy Morning Tea Survey – Parent participants were asked to complete a final survey about the content of the last morning tea, as well as their views about the literacy morning tea series (see Appendix 8).
4. Semi-formal Interviews with Kindergarten Parents – A means of collecting the responses held by these participants about the connective program, as well as examining living and schooling in a rural area (see Appendix 4).

### Data Collected During all Three Phases

1. Written Documents – during the entirety of the research project items including Kindergarten students’ work samples (see Appendix 24, 25 & 26), reports, self-reviews, assessment tasks and results, current and previous annual school reports were collected as they came to hand.
2. Classroom Literacy Journal – this journal was written by myself and the Principal as a record of any relevant events or comments associated with the Kindergarten student’s literacy development.

3. Family Literacy Journals – each Kindergarten student’s family kept a research journal as a means of documenting the types of family literacy practices and events which were occurring within their households. These were given to families at the commencement of Phase Two, collected and returned to families halfway through Phase Two and then finally collected at the end of Phase Three.
4. Information Distributed to Families – any information which was distributed to the families involved in the project was also kept by myself as a record of what families had received. Such data included:
  - information distributed at literacy morning teas (see Appendix 18, 19 & 20)
  - all correspondence between myself, the school and families (see Appendix 10, 11, 12, 13, 14, 15 & 17)

Data collection consisted of many different forms and were collected throughout each phase of research. This was done as a means of ensuring that I had a well-rounded insight of the research setting and the participants, which enabled me to efficiently address the research questions.

### **3.5.2 Rationale behind the Means of Data Collection**

This section reveals why the above means of data collection were employed in this particular research study. Yin (1994:78) reported that six predominant sources of evidence can be used as data in case studies and these include documentation, archival records, interviews, direct observation, participant-observation and physical artifacts. This study employed the use of interviews, observations (written-up as documents) and

document reviews (incorporating what Yin referred to as documentation and archival records). The following section discusses how a number of the aforementioned sources of evidence were incorporated into this study.

## Interviews

### *Semi-formal Interviews*

During the research project I interviewed the Year One parents, the Principal, the Kindergarten parents and Kindergarten students. Semi-formal interviews were utilised as I believe that they gave me, the interviewer, a certain level of freedom: the topics and open-ended questions had been devised prior to the interview taking place, but the exact sequence and wording of the questions did not have to be the same for each respondent (Cohen et al., 2000:278). This freedom allowed me to follow a respondent's train of thought, as well as giving me the option to explain and extend questions as deemed appropriate.

The Year One parents were interviewed during Phase One of the research project and the transcripts of these interviews were used as a means of finding out how the previous year's Kindergarten parents found out about their child's school literacy development. These interviews also gave me an insight into the current bonds between families and the school. The Sunnyvale Public School Principal was also interviewed in Phase One so that I could gain an understanding of how the school viewed the current bonds between itself and families, with particular regard given to the students' literacy learning and development. Phase Two saw the implementation of the connective program which had been designed with the results of these semi-formal interviews in mind.

Phase Three of the research project saw both the Kindergarten parents and students participating in individual semi-formal interviews. This gave me the opportunity to collect data about both sets of respondents' experiences associated with the research project, as well as to enquire about the respondents' personal views about literacy.

### *Surveys*

Whilst discussing the use of interviews in case studies Yin revealed that surveys may also be incorporated in a case study (1994:85). Neuman (2006:43) stated that a survey can either take the form of an interview or a questionnaire and in this project, along with the semi-formal interview, I opted to survey people using a written questionnaire. This was because I wanted the respondents to answer the questionnaires at home and answer the questions when it was convenient for the respondent. The completed questionnaires could then be returned as anonymous documents. Neuman also claimed that survey data are usually summarised in charts, graphs or tables and then analysed with statistics. Due to the small number of respondents involved in this research study the only quantitative work done with the data was of a very simplistic nature; for example "two out of the three respondents felt..."

During Phase One of the research the Kindergarten parents were asked to complete a written questionnaire which surveyed the types of literacy-based activities that the Kindergarten students were involved in whilst at home with their family. This survey was completed at the beginning of the research project and coincided with the early stages of the school year, so that I could become familiar with what families were doing prior to the implementation of the study.

At the end of each of the literacy morning teas, which were held in Phase Two of the research, those in attendance were asked to complete a written survey about the content of material delivered. These pieces of data have been referred to as a survey rather than a questionnaire, because the respondents were required to select a specific option related to how they felt about particular issues, as opposed to answering questions.

During Phase Three of the research the Principal was surveyed with a written questionnaire. Rather than instigating another semi-formal interview I selected this mode of data collection so that the Principal had the opportunity to complete the task in her own time and could answer the questions without the extra pressure of having myself present.

#### Document Review

As previously stated Yin (1994) recognised documentation and archival records as two forms of data collection in case study research. In regards to these two types of data Yin relayed a comparison of their strengths and weaknesses in Table 3.3.

**Table 3.3: The Strengths and Weaknesses of Documentation and Archival Records as Sources of Evidence** (adapted from Yin, 1994:80)

Source of Evidence	Strengths	Weaknesses
Documentation	<ul style="list-style-type: none"> <li>• stable – can be reviewed repeatedly</li> <li>• unobtrusive - not created as a result of the case study</li> <li>• exact – contains exact names, references, and details of an event</li> <li>• broad coverage – long span of time, many events, and many settings</li> </ul>	<ul style="list-style-type: none"> <li>• retrievability – can be low</li> <li>• biased selectivity, if collection is incomplete</li> <li>• reporting bias – reflects (unknown) bias of author</li> <li>• access – may be deliberately blocked</li> </ul>
Archival Records	<ul style="list-style-type: none"> <li>• (same as above for documentation)</li> <li>• precise and quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• (same as above for documentation)</li> <li>• Accessibility due to privacy reasons</li> </ul>

The collection of documentation includes items such as letters, memoranda agendas, minutes of meetings, progress reports and newspaper clippings (Yin, 1994:81). Archival records may include service records, organisational records, maps and charts, lists of things such as names, survey data (for example, census records) and personal records (for example, diaries) (Yin, 1994). As I started collecting written documents for data I realised that there were several articles which I believed could have been classified as either being what Yin referred to as documentation or an archival record. For example, the family literacy journals and classroom literacy journal not only followed the progress of the Kindergarten students (hence, similar to a series of progress reports), but also followed the format of a diary; therefore, possibly belonging to either category. Stake

(1995:68) broadly defined the examination of items such as newspapers, annual reports, correspondence, minutes of meetings, and the like, as document review. Due to the similarities found by Yin in documentation and archival records' strengths and weaknesses, as well as the fact that I found it hard to label some of my data as belonging to one or the other category I have adopted the term document review to refer to all written documents that were collected as data for this research project.

### **3.6 Reliability and the Triangulation of Data**

Whilst reliability in quantitative research equates to a study's repeatability, in qualitative research, and in particular case study research, the researcher is not required to have any control over the variables being investigated. As such, in case study research reliability does not equal repeatability and due to this some people may regard the findings of the project as being untrustworthy. To instill a level of trustworthiness within my study I adopted the principles of triangulation.

Yin (1994:91) revealed that "... a major strength of case study data collection is the opportunity to use many different sources of evidence..." Hence, even though my study took place in a small and unique setting I undertook three case studies on students and their families, rather than just focusing on one child. This approach allowed me to gather three different perspectives from families, thus, leading to the examination of the similarities and differences across the three families.

Triangulation was also incorporated in the study by the collection of different forms of data. Rather than simply concentrating on reliability equating with repeatability

qualitative researchers are more concerned with reliability meaning fidelity to real life, context and situation – specificity, authenticity, comprehensiveness, detail, honesty, depth of response and meaningfulness to the respondents (Cohen et al., 2000:120). To achieve consistency within the project I utilised several different means of data collection. Table 3.2 identified the various forms of data which were used to collect evidence from participants and the setting. It was important to me to create a study which possessed reliability in the sense of qualitative research. By this it is meant that the study has dependability and consistency (Neuman, 2006:196). I achieved this by triangulation, using a number of participants as well as a variety of data. This led to the interpretation of a number of perspectives rather than simply relying on one point of view.

### **3.7 Data Analysis**

The data collected throughout this project were analysed to uncover the main themes and concepts associated with each of the research questions. As previously discussed in Section 3.3.3, along with case studies this project also incorporates ideals from the research strategy of grounded theory. Punch revealed how grounded theory utilises the data analysis approach of coding, more specifically the use of open, axial and selective coding (2005:205). Neuman (2006:460) reported how it was Strauss (1987) who defined the three cycles of coding: open, axial and selective.

During the first phase of research I interviewed the Year One parents and the Principal, as well as asked the Kindergarten parents to complete a questionnaire. These pieces of data were analysed during the first phase of research, as I needed to know the

contents of these pieces of data to be able to proceed with the second phase of research. The data were analysed by a coding system which is described below.

### **Open Coding**

This is the first time that the data is examined: “The researcher locates themes and assigns initial codes in a first attempt to condense the mass of data into categories” (Neuman, 2006:461). It should be noted that these preliminary themes and codes may later be changed in the remaining two cycles of analysis. Cohen et al. (2000:283) suggested that researchers can write a descriptive code at the side of each piece of data. Instead of writing the codes, highlighters were used to colour each of the specific themes I identified in the first examination of data. This strategy is recognised by Neuman (2006:461).

The themes that were identified in this cycle of analysis were based on the research questions, so I knew prior to the analysis what themes I was looking for. In regards to this prior knowledge of themes, Miles and Huberman (1994:65) stated:

Creating a start list of codes prior to fieldwork is helpful: it forces the analyst to tie research or conceptual interests directly to the data. But the analyst should be ready to define or discard codes when they look inapplicable, overbuilt, empirically ill-fitting, or overly abstract.

However, I was open to the possibility that other themes which I had not predicted may have emerged at this first stage of data analysis. Miles and Huberman (1994:65) reported that: “You also can work more inductively by waiting for the field notes to suggest more empirically driven labels.” The completion of the first stage of coding allowed me to identify the preliminary themes of the research project and led to the commencement of

axial coding.

### **Axial Coding**

The second cycle of data analysis used in this project was axial coding, whereby I set out with the initial themes established in open coding and looked for additional codes or new ideas, rather than focusing on the raw data. Punch (2005:210) suggested that it is during this cycle of analysis that the researcher can look for concepts which connect things to each other. Neuman (2006:463) supported this approach as he revealed that it is during the axial coding cycle that the researcher should ask questions in regards to causes and consequences, conditions and interactions, strategies and processes, as well as searching for categories or concepts which cluster together. It was during this cycle that I further developed the themes of the project's conceptual framework (see Chapter Two) and organised the data in preparation for the last stage of coding.

### **Selective Coding**

Selective coding is the last cycle of data analysis in Strauss' (1987 in Neuman, 2006) coding approach. Punch suggested that it is called selective coding because the researcher needs to do exactly this; select an aspect of the research as a main category and concentrate on this (2005:211). In order to achieve Punch's initiative the data and previous codes need to be looked at once more in order to isolate cases in the research which illustrate the themes of the study (Neuman, 2006:464). For my study I found this particular cycle as an appropriate means of completing the conceptual framework and also identifying issues for the conclusions and future research found in Chapter Eight.

### **3.7.1 Summary**

Data analysis allowed me to achieve two specific things: firstly, to answer the research questions which I had initially set out to investigate, and secondly to create the project's connective program. The three cycles of data analysis also enabled me to form clear direction for the discussion, conclusions and future research section found in Chapter Eight.

## **3.8 Discussion of Validity**

All research projects, both quantitative and qualitative, are required to possess validity, although it is impossible to totally eliminate all threats to the validity of a project (Cohen et al., 2000:105). In this particular study I have employed both internal and external validity.

### **3.8.1 Internal Validity**

Punch (2005:254) claimed that internal validity is most obvious in quantitative research, where it means the extent to which the relationships between the variables are correctly interpreted. In qualitative research Punch suggested that internal validity "means the extent to which the findings faithfully represent and reflect the reality which has been studied..." (2005:254). LeCompte and Preissle (1993, in Cohen et al., 2000:108) suggested that there are a number of forms of internal validity which can be found in qualitative research. One such kind of internal validity is the credibility of the data, which I set out to achieve in my study. Cohen et al. also revealed how Lincoln and Guba (1985) suggested a variety of means to ensure that qualitative research possesses credibility. I utilised three of Lincoln and Guba's suggestions to address the issue of

ensuring credibility for my project. These means included: prolonged engagement in the research setting; persistent observation by myself, the Kindergarten parents and the Principal; and triangulation of data methods and sources (2000:108).

### **3.8.2 External Validity**

Cohen et al. (2000) referred to external validity as the degree to which a study's results can be generalised to other cases, situations and the wider population. Whilst this is something which is usually associated with quantitative research, Punch (2005) discussed how generalisability can also be found in case study research. This can be done by conceptualising and by developing propositions. In order to include conceptualising within a study Punch (2005:146) suggested that this be done during data analysis, which was one of the aims of using grounded theory. The creation of propositions was considered during the coding of the data. Even though generalisability is something which is achievable in qualitative research it must be pointed out that part of what makes this study unique is the small school setting and the limited number of participants. It was not anticipated that the results could be generalised to another situation, or indeed the wider population: instead, the case studies open a window of insight into literacy development within a small community, more specifically a small rural school.

### **3.9 Further Ethical Considerations**

Prior to the commencement of the study it was essential for me to consider any ethical issues which may affect the implementation of the research study. Winter (1996) suggested that researchers are required to ensure that all relevant persons, committees and authorities have been consulted about the proposed research. I sought permission to

conduct the research firstly from the University of New England's Ethical Committee and the NSW DET. The Sunnyvale Public School Principal was also consulted (see Appendix 10 & 11). Once permission had been granted from these bodies a meeting was held at the school, attended by all possible adult participants. The meeting attendees were given information and consent forms to take home, read and sign if they felt comfortable participating in the study (see Appendix 12 & 13). The consent form for the Kindergarten parents also had a section for them to give their consent for their child to participate in the study. Once the study had been explained to the Kindergarten students they were also required to sign a consent form if they wished to participate in the study (see Appendix 14).

It was made clear to all possible participants, both verbally and in writing, that there would be no penalties for those people who chose not to participate. Once the consent forms had been signed and the study commenced participants also had the right to withdraw from the research at any time.

To respect the privacy and protect the identities of participants and the research setting pseudonyms have been used. This enabled the participants to speak freely to me, knowing that their identity would not be revealed.

Confidentiality was another ethical aspect considered during the implementation of the study. All data and information collected for the research was locked away when not in

use and five years after the completion and examination of the project it will be destroyed.

My main aim regarding ethical considerations was to respect the rights and needs of the families and school staff members which were involved. This was necessary because “researchers working with families need to be flexible both in what they ask of families and in how they conduct the research” (Cairney & Ruge, 1998:203).

### **3.10 Concluding Comments**

This chapter identified how the research methodology of the research project enabled me to answer the research questions. The research framework has been included to assist with understanding the structure of the research project and data collection. I have explained the reasons why the qualitative research paradigm was selected, along with the use of the case study and grounded theory methodologies. The rejection of the quantitative research paradigm, along with other inappropriate methodological approaches has also been discussed. Data collection and data analysis have both been described, as well as the issues of reliability and validity. The ethical considerations of conducting research with young children, their families and a school were also discussed to illustrate how correct procedure was followed to allow research to take place in such a setting.