PERSPECTIVES ON THE EFFECTIVENESS OF INQUIRY-BASED LEARNING AS AN INCLUSIVE PEDAGOGY IN THREE INDEPENDENT SCHOOLS IN JOHANNESBURG

by

MICHELLE DECKER

9501485H

Research Report for

MASTER OF EDUCATION

in the Faculty of Humanities

at the

UNIVERSITY OF THE WITWATERSRAND

SUPERVISOR: DR MOENIERA MOOSA

AUGUST 2020

Protocol Number: 2019ECE011M

DECLARATION

I, Michelle Helena Decker, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Education in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

_____ (M.H. Decker)

Signed on __24 August 2020__ at __Randburg_____

ACKNOWLEDGEMENTS

Undertaking a research study requires support and the contribution of many people. I appreciate all those who have helped me along the way, without which this study would not have been possible.

My deepest appreciation goes to my supervisor Dr. Moeniera Moosa for sharing her wisdom with me and patiently guiding me through this process. I value all her kindness and unending support.

In addition, I wish to express my gratitude and appreciation to the following people:

- The Heads of all three independent schools involved in this study, for welcoming me into their schools and allowing me the opportunity to conduct my research.
- The wonderful teachers who permitted me to observe their lessons and willingly shared their experiences with me. You are all an inspiration!
- The learners in all three schools, who were welcoming and engaging.
- Dr. Reville Nussey for her meticulous editing.

Finally, I would like to thank my family, particularly my parents for their constant encouragement and for instilling in me a desire to learn. My appreciation to my husband Mike and our two beautiful children Emily and Matthew is endless. Thank you for your boundless support and understanding during my studies. I really appreciate all your help and the many sacrifices.

ABSTRACT

Inquiry-based learning (IBL) is a pedagogy that requires learners to answer questions or solve problems actively and collaboratively. The purpose of this research was to uncover the extent to which this way of learning allowed for the inclusive participation of all learners. The study investigated the inclusive potential of IBL from the teacher and learners' perspectives, by taking their unique experiences into account. A mixed methods approach was utilised and the data-collection tools consisted of document analysis, classroom observation, participant interviews and learner self- reflection questionnaires. The context comprised of three independent, girls' schools in Johannesburg where one IBL lesson was observed in each school. The participants were selected based on their participation in these lessons, this included a total of five teachers and 117 learners in the sample. The research findings concluded that IBL did have the potential to be an inclusive pedagogy. The reflections from both teachers and learners, were mostly positive and they were able to describe feeling of inclusion, confidence and enjoyment in their learning. The teacher and learners' experiences reflected congruence and similarities in their reflections. There are areas that need to be monitored in order to ensure that IBL's inclusive potential is to be met. These include the structuring of the inquiry and engagement with content, skills and knowledge development, peer interactions and collaboration, the learners' individual characteristics, teacher support, the use of technology and the implementation of the lesson. As much as these factors need to be monitored for exclusion, they could also contribute towards to the inclusive potential of IBL. The limitations of this study were focused on the lack of potential generalizability of the results for a larger population, this is due to the narrow context of girls' independent schools and the further narrowing of focus on the intermediate phase. An IBL lesson may require a longer observation than this study allowed. These limitations allow for opportunities for further study. This, coupled with some variations in results in the different schools, could lead to exciting research opportunities.

Keywords

exclusion, inclusion, independent schools, inquiry-based learning, intermediate phase, pedagogy, problem-based learning, scaffolding.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

IBL	Inquiry-Based Learning
PBL	Problem-Based Learning
ISASA	Independent Schools Association of Southern Africa
ZPD	Zone of Proximal Development

LIST OF TABLES, GRAPHS AND FIGURES

CHAPTER 1: INTRODUCTION AND BACKGROUND

"It is inclusive education that is considered the most appropriate and most equitable strategy for addressing the diverse needs of all learners in South Africa" (Englebrecht & Green, 2018, p. 88).

1.1. Introduction

Inclusion is a worldwide movement, with the United Nations focusing on the rights of children and people with disabilities. South Africa is relatively new to this way of thinking and due to its unique history, the implementation of inclusion requires a different approach to teaching and learning (Walton, Nel, Hugo & Muller, 2009). At the end of apartheid in South Africa, there was a commitment to the transformation of the education system. *White Paper 6: Special Needs Education* (2001) provided an outline for the methodical change to the system of inclusive education. Inclusive education in South Africa follows a human rights approach. The values adopted are those of equality, human rights and recognition of diversity. The South African government's focus has been on providing access to education and less about the pedagogy needed for successful inclusion. The importance of a quality inclusive pedagogy cannot be underestimated: Engelbrecht (2011) declares that inclusive education is more than just ensuring that children are able to attend a school, because it also includes teaching in a way that allows all to participate in the classroom.

The reason behind this research is to find out whether inquiry-based learning (IBL) has the potential to be an inclusive pedagogy when it is put into practice in the South African classroom. With the implementation of IBL in schools, it is often assumed by teachers that its cooperative nature encourages an inclusive culture. I intend to examine the following in this research: the extent to which children with diverse needs can be accommodated by IBL; and, the extent to which they are able to participate meaningfully in this form of learning. The potential for IBL to address teachers' concerns and challenges about the implementation of inclusion is invaluable. IBL gives practical pedagogical techniques that could potentially cater for diverse learners in a single

classroom setting. It might possibly provide a pedagogical strategy that meets the needs of an inclusive environment.

1.2. Background

IBL as a pedagogy is gaining popularity, because it employs scientific methods to build knowledge. It is an approach that is focused on answering a question or solving a problem. Its emphasis is on the active participation of learners to discover knowledge (Pedaste, Mäeots, Siiman, De Jong, Van Riesan, Kamp, Manoli, Zacharia & Tsourlidaki, 2015).

There are benefits to using IBL for all learners. Hmelo-Silver (2004) lists some of these benefits as having active learners who take on real-world problems and they become responsible for their own learning. In addition, IBL enhances problem-solving, higher-order thinking, it encourages shared-knowledge construction and it has the potential to be incredibly motivating. According to research conducted by Filippatou and Kaldi (2010), children with learning difficulties gained the following benefits through an inquiry-based approach in their academic performance: motivation; cooperative learning; and, improved social acceptance and engagement. It is, therefore, important to consider these benefits, particularly as they act as potential ways to encourage and develop diverse learners. Miles and Ainscow (2011) stated that the evidence suggested that social learning through inquiry could nurture and respond to learners' diversity. My research aims to find out whether all learners' needs are accommodated by IBL, and if learners who experience learning difficulties find this approach to learning a challenge.

Filippatou and Kaldi (2010) also, however, noted that there were limitations to IBL, because of individual learners' specific educational needs and it was essential that these needs were accommodated and addressed. According to Kirschner, Sweller and Clark (2006), discovery learning might lead to incomplete and disorganised knowledge, which could be ineffective and would lead to misconceptions. This means that learners might feel lost and frustrated. Using a pure discovery approach to learning, even when it is hands-on and involves group discussion, might fail due to the learners' inability to select relevant information. If learners have too much freedom to discover, then they may miss the knowledge or skills that they need to acquire (Mayer, 2004). Kirschner et al. (2006) stated that inquiry-based instruction places heavy demands on the working memory and

this severely limits the information retained in the long-term memory. This means that learners potentially do not have access to this information for learning and it limits their ability to participate in class. Clark, Kirschner, and Sweller (2012) asserted that inexperienced, less skilled learners or those with less prior knowledge benefitted less from unguided inquiry and a structured approach with explicit teaching garnered better academic results. This highlights that unguided approaches seem to be effective when students have large amounts of prior knowledge that can provide 'internal' guidance. In the classroom, the effect of this lack of foundational skills may be particularly evident in learners who find aspects of their academics challenging. It will therefore be necessary to observe the extent to which these limitations are being addressed in the practice of implementing IBL.

According to Belland, Glazewski and Ertimer (2009), the application of IBL has focused on gifted and average students, but there is very little research related to the effectiveness of this type of learning for learners with disabilities. This suggests that there is a knowledge gap that exists in the literature, which is confirmed by Filippatou and Kaldi (2010) who stated that "research on project-based learning regarding primary school learners with learning difficulties is scarce" (p. 18). In turn, this raises the question of whether IBL would be able to cater for the needs of all as required by an inclusive pedagogy. Forslund Frykedal and Hammer Chiriac (2018) also highlighted the need for studies that focus on the inclusive potential of pedagogies with specific emphasis on the need to include the learners' perspectives about these studies. This is echoed by Florian and Spratt (2013) who lament over the lack of guidance in literature around the enactment of inclusion in the classroom.

In the South African context, there is a lack of literature and research about inclusive pedagogies in South African schools (Makoelle, 2012). This area seems to be neglected, as it has been challenging to find studies related to this topic in a South African context. In particular, the implementation of IBL in independent schools in South Africa is not well documented. These are privately funded rather than state funded schools. IBL is becoming increasing popular in many independent schools in the northern suburbs of Johannesburg. These schools are generally considered to be better resourced when compared to schools in public education. They generally have access to more money and

are therefore better equipped. In addition, these schools have more freedom to implement their own curriculum, which allows them the freedom to use inquiry-type methods.

On the 17 July 2018, an inaugural cluster meeting was held at an independent school in the northern suburbs of Johannesburg, to discuss strategies for and how to implement IBL. This was a meeting where delegates from different schools with an interest in IBL met to listen to and discuss best practice. Due to IBL's rise in popularity in these contexts and the lack of South African based research, its claims to foster inclusiveness needs further study. All the presentations at the inaugural cluster meeting did not address issues of inclusivity, and learner diversity was almost ignored. In my research, I will be examining how the teachers accommodate for diversity and the learners' participation in an inquiry-based framework. I will pose the following question: Is every child able to have full and meaningful participation during the implementation of IBL in the classroom irrespective of their individual characteristics?

1.3. Problem Statement

Due to the introduction of IBL in the school where I am currently employed; I became interested in researching the extent to which this form of learning catered for learners with different needs within a single classroom setting. As the process evolved, there was a great deal of focus on the curriculum design, which entailed discussing various applications, implementations, assessments and learner progress reporting strategies. However, there was very little attention paid to the potential inclusivity or exclusion that might occur with this change in pedagogy.

Furthermore, I was interested in finding out about the experiences of teachers, as implementers, and the learners, as recipients of this form of learning, and whether these experiences reflected any similarities with an inclusive pedagogy. Spronken-Smith, Bullard, Ray, Roberts and Keiffer (2008) highlighted the issue that most of the research that reflected teachers' experiences of IBL was sparse, and there was a call for teachers to become engaged in the research process. In addition, the emphasis of most research has focused on children rather than research conducted with children. The latter approach means that a researcher listens to the children's own views, opinions and experiences. By listening to children, it helps to build good relationships with them, and it forms a vital

aspect of inclusive research. It is thus important to include children's voices in research on inclusive practices in schools (Adderly, Hope, Hughes, Jones, Messiou & Shaw, 2015).

Bearing the above point in mind, I will investigate how learners with diverse needs experience their learning in a classroom when IBL is used as a pedagogy. The problem that this research aims to examine is whether IBL is an effective strategy that caters for diverse learners within a single classroom setting. It is important to reflect critically on both the learners and teachers' experience of IBL, as well as to explore the extent to which the use of IBL leads to the inclusion or exclusion of the learners. In addition, it is vital to reflect on which practices in the classroom were the most effective in terms of inclusivity – those that allowed for meaningful participation of the learners. These practices, which improve the inclusive potential of IBL, could be adopted in future classrooms.

1.4. Rationale

The rationale for research in this area is that when embracing inclusive education, there is a challenge to more traditional views on special education. This necessitates a move towards developing more effective schools for everyone, where diversity of learners is welcomed (Florian, 2019). This raises the following question: To what extent does IBL show the potential to be a pedagogy that could be used in schools that would allow for full and meaningful participation by diverse learners? Proponents of IBL claim that it encourages active learning through discovery, uses questions and problems, which leads to collaboration and increased learners' motivation. It is, therefore, important to conduct research to establish to what extent an inquiry-based approach to learning could be adopted as a relevant pedagogy to assist with inclusion. This approach could facilitate a move away from traditional approaches to learning to those that are collaborative, experiential and relevant. However, it is important to take cognisance of the limitations mentioned previously that may not consider the diverse needs of different learners. Hlemo-Silver (2004) asserted that classroom reform was vital, and that problem/inquiry learning could be the vehicle for this reform, as it fostered flexible thinking and lifelong learning. To create an inclusive environment with appropriate and valid teaching strategies, so that all learners were given the opportunity to participate and be

accommodated in a class with their peers would be an important aspiration in South Africa.

1.5. Purpose Statement

The purpose of the proposed study is to inquire whether IBL meets everyone's needs within a classroom so to allow for meaningful participation. My aim is to give intermediate phase teachers and learners a voice to describe their own experiences and participation in a unit of work using IBL, in order to clarify the inclusiveness of the task. This will provide a way of reflecting critically on the teachers and learners' experiences of IBL to assess its inclusiveness. In addition, this might lead to improved practice, as it could increase IBL's ability to cater for a range of diversity within the classroom. Given the growing popularity of IBL in the previously stipulated context of independent schools, it is critical to understand its inclusiveness from the point of view of both the teachers' and learners' perspectives. As this study progresses, the topics, variables and questions could be adapted and modified.

1.6. Research Questions

1.6.1 The main question of this research study is: To what extent do the experiences of an inquiry-based learning pedagogy promote inclusive participation?

1.6.2. Sub-questions include:

1.6.2.1. How do the teachers understand and take into consideration the learners' learning needs through IBL?

1.6.2.2. How do the teachers' experiences of the IBL pedagogy contribute to the promotion of inclusion?

1.6.2.3. How do the learners' experiences of the IBL pedagogy indicate inclusive practice?

1.6.2.4. To what extent do the individual perspectives, from both the teacher and the learners, reflect congruence in their experience of inclusivity during IBL?

1.7. Delimitation of the Study

This study will be delimited to research focused on IBL. There could be alternative pedagogies that would result in an inclusive environment. However, these different forms of teaching and learning are beyond the scope of this study. The current study will only focus on inquiry and problem-based learning as examples of potentially inclusive pedagogies.

A further delimitation is the research's context and the sample of participants. The research scope was limited to three independent girls' schools in the northern area of Johannesburg, which were currently implementing the targeted pedagogy as part of their curriculum. The sample was limited to intermediate phase teachers and learners. These sampling decisions were made in order to provide some consistency in the results. The learners were from similar contexts, which might eliminate other mitigating factors that could affect the findings. This choice removed state schools, boys' schools and coeducational independent schools from the study, as well as learners from other phases in the schooling system.

1.8. Breakdown of Chapters

Chapter 1: Introduction and Background of Study

This chapter provided relevant background information, and the problem statement was described. The purpose and objectives of the study and research questions were defined.

Chapter 2: Literature Review

This chapter describes the conceptual framework and theoretical perspective. As part of the literature review, current ways on defining IBL and inclusion are discussed. Next, research on IBL in a South African context is examined. Finally, research on the accommodation of learners with diverse needs, using IBL as a pedagogy, is discussed.

Chapter 3: Research Design and Methodology

This chapter discusses the research methodology and design of this study. I discuss the following: sampling (size, method, and selection); data-collection methods (interviews, observations, and document analysis); ethical considerations; reliability, validity; and, data analysis procedures.

Chapter 4: Presentation of Data

This chapter presents the findings gathered from the research study. All the data collected from the different data-collection tools are presented separately. This includes document analysis, self-reflection questionnaires and both teachers and learners' interviews.

Chapter 5: Findings and Discussion

This chapter will discuss the findings presented in Chapter 4. This discussion will be based upon the research questions presented in Chapter 1 using the literature presented in Chapter 2. The chapter will deliberate on themes, trends and conclusions extrapolated from the data.

Chapter 6: Overview, Recommendations and Limitations

This final chapter briefly provides a general overview of the research. Then it presents the recommendations based on this study, and it provides limitations that could impact the applicability of the findings. Finally, it makes suggestions for topics that could be expanded on for further research.

1.9. Conclusion

This chapter discusses the requirements of an inclusive pedagogy, namely, that all learners have the ability to participate fully within the school curriculum. The focus of my research is whether IBL allows for the full participation of all learners and whether it could be considered as an inclusive pedagogy. As evidenced through my research, this does seem to be the case, however, scaffolding needs to be put in place in order to make inclusion more successful. In the following chapter, I will look at all relevant concepts, theories and literature that relate to both inclusion as well as IBL.

CHAPTER 2: REVIEW OF THE LITERATURE

"Give the pupils something to do, not something to learn; and the doing is of such a nature as to demand thinking, or the intentional noting of connections; learning naturally results" (Dewey, 1923, p. 181).

2.1. Introduction

My research on learners and teachers' perspectives on the effectiveness of IBL strategies as an inclusive pedagogy entails a thorough review of the current literature. This includes a conceptual framework that defines the following concepts: inquiry-based learning; inclusive education; inclusive practice; inclusive pedagogy; exclusion; scaffolding; independent schools; and, intermediate phase learners. Next, I will discuss IBL's theoretical framework, namely, Piaget's constructivism, a sociocultural model by Vygotsky, and Dewey's cooperative and experiential learning. Then, I will critically engage with the literature and current research pertaining to inclusion and how a pedagogy is judged as inclusive or not. I will also discuss IBL and how its definition and interpretation impact on its implementation. Finally, I will look at the relationship between IBL and its potentials as an inclusive pedagogy, by focusing on examples of research into its implementation in various contexts.

2.2. Conceptual Framework

A conceptual framework is where a researcher defines and expands upon the key concepts used in the research. Key concepts are often interpreted and discussed so that the relationships between the concepts are established (Badenhorst, 2007). The key concepts relevant to this research are discussed in the following sections:

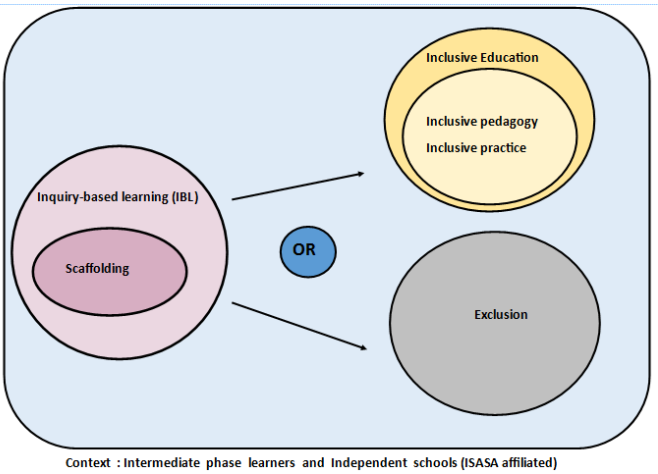


Figure 2. 1. Conceptual Framework Map

2.2.1. Inquiry-based learning

Kirchner (2006) grouped IBL, discovery learning, problem-based learning, experiential learning and constructivist learning under the same umbrella. He defined these terms as a minimally guided approach to learning, where learners discovered and constructed knowledge for themselves, after being given only essential information. However, there were conflicting views and subtleties in the definitions found in the literature, which will be addressed further in the chapter. Spronken-Smith, Bullard, Ray, Roberts and Keiffer (2008) defined IBL succinctly: "IBL is essentially a question-driven, philosophical approach to teaching that involves active, student-centered learning. The teacher acts principally as a facilitator or mentor, guiding and encouraging students through the inquiry process" (p. 71). For the purpose of my research, I have adapted the above definitions, and defined IBL in the following ways: It is learning, which is centralised around a problem or question; the learners are required to solve a problem by peer collaboration and via teachers' facilitation; and, to construct knowledge and skills through a process of discovery and inquiry.

2.2.2. Inclusive education

In some countries, inclusive education was seen as an approach to meet the educational needs of children with disabilities. However, the concept of inclusion was more broadly defined internationally, because it was envisioned as an opportunity to address a diversity of learners in a classroom in a manner which included all (Ainscow & Kaplan, 2005). Inclusion was also about fair and socially just approaches, where learners felt part of their communities (Dharan, 2015). In addition, this definition of inclusive education was also seen as a process of growing participation and ensuring a decrease in exclusion from the culture, community and curricula of conventional schools (Booth, Ainscow, Black-Hawkins, Vaughan, & Shaw, 2002; Abels, 2015). As seen by these varied interpretations there are contestations and disagreements around the meaning of inclusion and this leads to differential understandings and enactments of what constitutes and can be classed as inclusive (Florian & Spratt, 2013). In my study, I have defined inclusive education as the full and meaningful participation of all learners with diverse needs in a specific classroom setting.

2.2.3. Inclusive practice

Florian (2009) defined inclusive practice as "the actions and activities, the things that staff in schools do, that give meaning to the concept of inclusion" (p. 814). Florian and Spratt (2013) assert that developing inclusive practice in schools is difficult because of the different interpretations and enactments of inclusion. I defined inclusive practice as an activity that allowed for the inclusion of all in the learning process.

2.2.4. Inclusive pedagogy

Florian and Black-Hawkins (2011) describe an inclusive pedagogy as one where the teaching strategies would increase the participation and achievement of all learners. Florian (2015) adds that an inclusive pedagogy is an approach to teaching which improve the educational opportunities for all within the classroom. According to Englebrecht and Green (2018), an inclusive pedagogy aimed at raising the achievement of all learners, while preserving the inclusion of those who were vulnerable to being excluded or marginalised. However, there was some confusion in South Africa around what constituted an inclusive pedagogy and there were different interpretations (Makoelle, 2012). For the purpose of this study, I have defined an inclusive pedagogy as a teaching practice which would encourage the full and meaningful participation of all learners in a classroom.

2.2.5. Exclusion

Exclusion was viewed as the practice of excluding learners from the learning environment so that they are unable to participate (Booth, et al, 2002). The *White Paper on the Rights of Persons with Disabilities* (2016) defined exclusion as "socially isolating or marginalising an individual or group on the basis of discrimination by not allowing or enabling them to fully participate and be included in society" (p. 20). For the purposes of this study, I have defined exclusion as the act where learners, for whatever reason, were in some way left out and were unable to participate in learning.

2.2.6. Scaffolding

Scaffolding could be viewed as the guidance provided by the teacher to help learners participate so that they are able to achieve what they may not have unassisted. It consists of tools used to assist and enhance the learner's performance in a task or activity (Belland & Drake, 2013). It therefore, is as a tool that can be used to increase the inclusive potential of a task as it could increase the participation of all learners (Abels, 2015). Abels (2015)

listed tools, such as mnemonics, prompting, feedback, graphic organisers, peer tutoring, differentiated materials and targeted questions as examples of scaffolding. For the purpose of this study, I have defined scaffolding as any input given to provide support in achieving the goals of a task.

2.2.7. Independent schools

Independent schools are schools in South Africa that are funded by private stakeholders, these schools were included in the sample of this study. In contrast, public schools are funded by the state, these schools did not form part of the study. The schools that participated in my study belonged to a regulative body called the Independent Schools' Association of Southern Africa (ISASA). This regulative body required schools that are members to meet certain criteria, such as an Equity and Diversity policy, which encouraged associated schools to embrace inclusive practices (Walton, Nel, Hugo & Muller, 2009).

2.2.8. Intermediate phase learners

The focus of my research was on learners in the intermediate phase of schooling, which included Grades 4, 5 and 6, where the learners' ages ranged from nine to about 13 years old. Older and younger learners, from different phases of schooling, where not included as part of this study.

In the next section, I discuss the various theoretical frameworks on which IBL was based.

2.3. Theoretical Perspectives

The theoretical frameworks which inform IBL are constructivism, the sociocultural model and, of specific importance, experiential learning. I endeavour to show how the theories of Piaget (1936), Vygotsky (1978) and Dewey's (1923) have impacted and influenced IBL in that the basic tenants of their theories can be found in IBL. Together learning ideologies, such as constructing one's own knowledge, subjective experiences, collaboration and context, cooperative and experiential learning, are fundamental to the establishment of this pedagogy. Active inquiry is an essential component to IBL, and I use this approach and the theoretical frameworks that inform it in my research.

2.3.1. Constructivism

The core idea that informed constructivism was that learners constructed their own knowledge as they acted in the world (O'Loughlin, 1992). This was also a fundamental aspect of IBL in that learners were encouraged to be actively engaged in their learning. Piaget's view was biological, because he described the development of knowledge as a spontaneous sequence of stages, not unlike the stages you see in growth in the natural world, and where learning was triggered by specific situations (Arnold, 1985). Learning therefore occurred through an assimilation and accommodation of this information by the individual (Piaget, 1976). A critique of Piaget's constructivism was that it ignored the subjective, the importance of culture, power relations and dialogue within a classroom (O'Loughlin, 1992). This is unlike IBL, which encouraged connectedness and collaboration. Piaget's constructivist ideals were evident in IBL when the learners were asked to respond to and explore a question or problem. They were required actively to construct their own knowledge and understanding of the discovered knowledge. An IBL unit of work is formulated by using thought-provoking questions and problems.

2.3.2. The sociocultural model

Piaget's constructivism missed a key aspect of IBL, which was discovery through collaboration (Arnold, 1985). Vygotsky addressed this issue, as he highlighted that learning and development was a social process: The construction of knowledge occurred through social interaction, namely, with a mediator (Vygotsky, 1978). He emphasised that the use of language and communication was an integral part of interaction, learning and development (Arnold, 1985). The sociocultural approach to learning embraced social phenomena, such as the following: principles of apprenticeship; conversation and discourse; guided instruction; self-regulated learning; and, learning through cultural and historical contexts (Trent, Artiles & Englert, 1998). To be effective mediators of learning, teachers should have accurate knowledge of their students, so that the teachers focus on the students' strengths and their individual zone of proximal development (ZPD) (Trent, Artiles & Englert, 1998). Scaffolding is a term that can be used in place of or in conjunction with the ZPD (Glassman, 2001). Advocates of IBL used scaffolding to make learning more effective in IBL and teachers are seen as mediators in the learning process. The sociocultural model placed importance on an individual's meaning making through engaging with the social, historical and cultural contexts in a learning situation. This

meant that the learners were able to make their own meaning in a subjective way, yet this was done by interacting with diverse learners within their environment. It was the "dialectical interaction" (p. 810) between the setting, the individual, the product and the activity that created meaning (O'Loughlin, 1992). This idea spoke not only to an IBL pedagogy, but also to an inclusive ideology. The sociocultural model suggested the importance of interaction, collaboration, meaning making and scaffolding, which contributed to our understanding of IBL. Added to that its focus on the benefits of learning from the diversity within the learner's environment. It is relevant when it relates to IBL as inclusive because if it follows the tenets of this model IBL should cater for and embrace a diversity of learners.

2.3.3. Experiential learning

Dewey's work was of pivotal importance to IBL, as this philosopher highlighted the value of inquiry in education (Spronken-Smith, Bullard, Ray, Roberts & Keiffer, 2008). Both Dewey and Vygotsky shared similar ideas concerning the relationship between activity and learning, because Dewey influenced some of Vygotsky's early work. Some of the similarities between the two were: A focus on activity as integral to learning; the importance of everyday activities; history as part of the educational experience; and, the importance of social interactions. These characteristics all informed IBL. However, Dewey and Vygotsky differed slightly, as the former was more concerned with the individual as a thinker who questioned experience within a society, whereas the latter saw societal goals as integrated into the learning experience (Glassman, 2001). Dewey (1923) promoted "learning by doing" (p.217) or active learning and he spoke of the important relationship between learning, experience and learner reflection. This relates directly to the role of active learning which is encouraged as part of IBL. Another of Dewey's key ideas was that activity and thought were intertwined in a single learning experience, which led to free inquiry, because "experience is synonymous with education" (Glassman, 2001, p. 8). Dewey (1923) stated that this kind of learning led to an enriched society. Dewey saw experience as dedicated to the solving of problems. He stressed the importance of engaging learners in projects that appealed to and interested them. This focus on solving problems and the answering of relevant questions was directly related to IBL. Dewey also saw diversity as a vital component in any educational experience (Glassman, 2001), and that inquiry and diversity were related. Dewey (1923) stated,

"Education would soon reach a static limit in each class, for only diversity makes change and progress" (p. 104). By applying this idea to IBL, it showed IBL's potential to be an inclusive pedagogy. Dewey's views on education correlated to IBL, because he included experiential learning, cooperation with others, as well as the solving of problems.

By applying an inquiry-based approach to research, I used active observation and interviews to answer the main research question posed in this study. The theoretical framework of constructivism, the sociocultural model and experiential learning thus informed both my conceptual framework and the practical research I conducted in the classroom.

2.4. Critical Engagement with Relevant Literature

2.4.1. Inclusion

Inclusion could be viewed as a process of addressing and responding to diverse learners' needs through increasing their participation in learning. These envisioned changes and modifications to the content, structures and approaches to learning in order to educate all children (UNESCO, 2005). It became the school's responsibility to change in order to address all the learners' needs, rather than to expect the learners to make any adjustments (Makoelle, 2014; Forslund Frykedal & Hammer Chiriac, 2018). Diversity could make a contribution to everyone's learning, however, this is not necessarily the perception in reality (Abels, 2015). Learning ought to be made accessible for all, and not structured so that it was suitable for most learners with some differentiation for others (Florian & Black-Hawkins, 2011).

When examining an inclusive environment, it was important to evaluate the teacher's role. Väyrynen (2015) enumerated four teacher competencies necessary for inclusion: First, to appreciate the value of students' diversity; secondly, by supporting and having high expectations for learners; thirdly, by working with other teachers, parents and professionals; and, fourthly, by being lifelong learners themselves. The attitudes and expectations are important in setting the tone for a pedagogy to be considered inclusive. These various attributes need to be examined closely when analysing whether the teacher's role in IBL encourages inclusion or not.

To assess whether a practice could be characterised as an inclusive pedagogy, Florian and Black-Hawkins (2011) listed conditions that were required to be met. First, there needed

to be a shift in focus away from concentrating on learners with special needs to learning for all. This entailed making learning opportunities available to everyone and to focus on the 'what' and 'how' of what happened during the learning rather than 'who' was doing the learning. Secondly, there should be a movement away from deterministic beliefs about ability, and that 'others' could hold their peers back. This entailed a belief that all children could make progress, but by focusing on the following: what the learners were able to do rather than on what they cannot; by using a variety of heterogeneous grouping strategies; and, by using formative assessment to support learners. Finally, is a change in teachers' perception, from seeing difficulties in others as deficits in the learner to a movement towards seeing these difficulties as challenges for new ways of working and providing support. This involved teachers experimenting with new ways of working to support all learners, working with other adults in a way that respects the learners' dignity and continued professional development to develop more inclusive practices. In this research, I assess whether IBL could be considered as an inclusive pedagogy, by taking the above factors into account. Next, I discuss how IBL was defined in the literature and how this impacted on its implementation.

2.4.2. Inquiry-based learning

In order to investigate the effectiveness of IBL, it was important to have a clear understanding of the nature of IBL and its features. However, this was challenging, as there were varied interpretations of what constituted IBL. There were some common characteristics that ran through the various interpretations, but there were also some subtle differences between the different approaches to learning. In the literature, I noted that terms such as inquiry-based learning and problem-based learning were at times used interchangeably as synonymous and at other times their characteristics were clearly delineated as separate approaches to learning. As part of this discussion, I considered the various interpretations of IBL found in the literature, and with a view that the three schools I investigated might also have their own interpretations and applications in practice. Inquiry is not a new teaching approach, because it has been around since Socrates' time. According to Dewey the curiosity and interest of the learner will instigate and maintain an inquiry (Türkmen, 2009). Dewey and Vygotsky saw inquiry as based on an open-minded approach to solve problems and the learner's interest in the inquiry was

motivation for their continued learning. The learner confronted and displayed interest in issues that were not easily resolved by their current thinking (Glassman, 2001).

Hmelo-Siver, Duncan, Ravit and Chinn's (2007) insisted that a distinction needed to be made between inquiry learning, project-based learning and learning which was minimally guided. Hmelo-Silver et al. (2007) asserted that project-based learning and inquiry learning were not examples of a constructivist, discovery-based approach with minimal guidance. Instead, they defined project-based learning as a situation in which learners "learn content, strategies and self-directed learning skills through collaboratively solving problems, reflecting on their experience and engaging in self-directed inquiry." (Hmelo-Silver et al., 2007, p. 100). They defined inquiry learning in an alternative manner, because learners "learn content and discipline-specific reasoning skills and practices by collaboratively engaging in investigations" (Hmelo-Silver et al., 2007, p 100). The main difference between these two approaches is the focus, which is either on problems as opposed to investigations, however, both approaches emphasised collaboration and that the learners were involved in an activity as part of learning. This meant that the learners were actively and cognitively engaged in making sense of an authentic problem or question. All the learning and activities were organised around this question. The learners developed evidence-based explanations and were responsible for communicating their ideas. The teacher played a key role in facilitating and mediating the learning process by providing extra information and guiding thinking on content during lessons

Guven and Duman (2007) highlighted the collaborative, student-centredness and integrative approach to real-world issues of problem-based learning (PBL), which involved an in-depth investigation into selected topics. They suggested that this approach developed creative and reflective thinking as well as problem-solving skills. Türkmen (2009) listed the steps of inquiry as following: asking questions; investigating solutions; and, creating knowledge by gathering information, discussion as well as reflection. Each of these steps followed naturally to another, which allowed for "authentic teachable moments" (Türkmen 2009, p. 2). Further, Turkman (2009) highlighted that there was disagreement among some teachers as to whether the emphasis of the inquiry was based on an activity itself or the knowledge created through an activity. The teacher provides and enables a collaborative and social environment which is supportive to learning.

Spronken-Smith, Bullard, Ray, Roberts and Keiffer (2008) posited that the relationship between IBL and PBL was not well defined. They noted that PBL was the better-known pedagogy, because there was more research and published literature that pertained to PBL. However, both used an inductive approach, which was determined by student engagement. PBL looked at problems which had known answers, and it had a shorter time scale. Spronken-Smith et al. (2008) defined PBL as a subset of IBL. In that they saw IBL as an umbrella term for different forms of inquiry, including those based on problems.

The above discussion showed that there was not much agreement about the subtle differences between these types of learning and their definitions. However, there are common ideas, such as active learning around a central problem/question with peer collaboration, as well as using teacher mediation, facilitation and scaffolding. This made it vital to investigate how the various schools, that participated in this study, interpreted, defined and practiced IBL. The implementation of an IBL lesson may differ from school to school, and this research aimed to note the teachers' level of guidance and scaffolding at the respective schools. As part of the investigation, the specific approach that a school adopted to IBL was outlined. In addition, the ways a school understood and implemented the teachers as well as the learners' role was noted. This would be reflected in the classroom by the learner's level of independence, activity level, degree of collaboration and final communication of ideas as evidence of learning. This information was garnered through document analysis of a school's planning as well as by observation and reflection. Once a clear understanding of how a school defined and applied IBL was established, then I could evaluate whether the teachers and learners' experiences of this pedagogy was inclusive or not.

2.4.3. Inquiry-based learning as an inclusive pedagogy

In my literature review on IBL within the inclusive classroom, I address the following: first, the gap in research and the prominence of IBL in certain learning areas; secondly, I discuss the need for scaffolding; thirdly, I deliberate on the ability of IBL to address diversity, particularly with children with learning difficulties; and finally, I discuss the roles of group members in mixed-ability groupings for effective collaborative learning.

2.4.3.1. IBL and research

There was a definite gap in the literature around the implementation of IBL by focusing on inclusion, as research in this area with school children appeared limited (Filippatou & Kaldi, 2010). There seemed to be more research on problem-based and project-based learning. As some of the main features were similar, I highlighted aspects of this research, as well as research on IBL. Most of the research on IBL was mainly focused on science teaching, although the research was applicable to different learning areas. An interesting study on the application of IBL to geography was completed by Spronken-Smith et al. (2008). They used an IBL format in various ways and concluded that it led to an improved understanding of the content, enjoyable learning, and a greater sense of achievement by leaners once complete. The limitations they identified were due to time, group dynamics and some group members, when working in groups, felt a lack of security and a sense of frustration. Spronken-Smith et al. (2008) listed various ways in which facilitation and scaffolding of IBL was necessary. These included building in previous activities, questioning techniques, supporting learners, allowing reflective activities, providing reassuring feedback, monitoring and challenging the learners in an atmosphere of trust.

2.4.3.2. Scaffolding

According to Abels (2015), IBL was a recommended pedagogy for inclusive practices. In her study on IBL in a science and chemistry classroom, she highlighted the importance of scaffolding as a tool to make IBL inclusive. Abels (2015) defined this scaffolding as "careful guidance" (p. 83). In her case study, she demonstrated how scaffolding had had a significant impact on the learners' ability to be able to participate in the learning. She highlighted that it was important to assess the learners' level accurately to provide the correct scaffolding for their needs, and to identify their ZPD. This could be achieved before the lesson during planning and also spontaneously while the lesson progressed. I will investigate whether scaffolding has a significant place in the planning and implementation of the IBL program in the classrooms used for my research, and I will also explore the impact of scaffolding as practiced in the classroom.

2.4.3.3. Diversity

Filippatou and Kaldi (2010) found that learners with learning difficulties benefitted from project-based learning through group work in terms of an increase in motivation, acceptance of others and heightened engagement during the task. The learners themselves

preferred the experiential learning over more traditional methods. In their study, they found an overall improvement in perceptions and attitudes towards group work. Filippatou and Kaldi (2010) asserted that project-based learning was an inclusive approach, as it allowed all learners the opportunity to work to the best of their ability. The learners who had learning difficulties were able to engage at their own level to meet academic and social goals. Yet, Filippatou and Kaldi (2010) acknowledged that learners with learning difficulties could find aspects of this type of learning challenging, as there was a required level of baseline skills in reading and writing that they might not have acquired. As a result, this approach could have an impact on a task that used secondary sources, which would need to be adapted. Alternatively, some individualised instruction was needed to engage learners fully in the process. This type of accommodation depended on the unique needs of the class and the range of diversity found in a classroom, but this qualification was not only relevant to learners who experienced difficulties with learning.

2.4.3.4. Group collaboration

Belland, Glazewski and Ertimer (2009) studied the roles and group dynamics in mixed-ability inclusive classrooms using PBL. They found that while group members were primarily concerned with their own learning, they were also able to fulfil different roles within the group. This situation helped to offset each other's shortcomings, and it helped them to solve the problem. The group members valued their peers' input and this included diverse learners who had different needs. These learners benefitted, because they were able to solve problems, engage and use self-directed learning more effectively. However, the teachers had to challenge and guide the learners' thinking to avoid their misconceptions and misinterpretation of information. This showed how important it was for the teachers to promote effective group interactions. The teachers needed to be cognisant of the different members' roles, so that the teachers were able to direct the learners' choices of roles.

Forslund Frykedal and Hammer Chiriac (2018) presented a Social Independence Theory, which was developed by Johnson and Johnson (2002, 2013). This listed five elements that were necessary for effective collaboration: First was "positive interdependence", and for each member to be linked to a group by shared goals; secondly, there was "individual accountability", where each member was responsible for a portion of a group's work and also to aid others; thirdly, there was "face-to-face promotive interaction", where group

members encouraged each other to participate unreservedly; fourthly, there needed to be "interpersonal and small group skills", which emphasised the ability to communicate and resolve conflict; finally, "group processing", where members discussed and evaluated their own work (p. 4) These necessary skills should ensure that group work would be effective, however, if they were not present, then they could lead to exclusion within groups. Leman (2015) stated that collaboration in groups could be unproductive at times, as this depended on the group's dynamics. This meant that teachers needed to be careful about how they set up conditions to allow for meaningful collaboration. In addition, the group members should be encouraged to reflect on their work as well as their roles within the group (Belland, Glazewski & Ertimer, 2009). This was one of the reasons why I felt that a guided self-reflection could be a valuable data-collection tool for my research. By gaining feedback from both teachers and learners on the group dynamics when working on the IBL task, this could help to gain an understanding of IBL's contribution to inclusivity or the lack thereof.

The literature on IBL and its effectiveness as an inclusive pedagogy was largely based on international studies. The theoretical underpinnings found in Piaget, Vygotsky and Dewey's theories all contributed to my understanding of IBL and its value as an experiential, collaborative and problem-based pedagogy. However, the question of whether IBL allowed for the full and meaningful participation of diverse learners within a single classroom needed to be examined further. The potential for IBL to be inclusive required research in classrooms, as it needed to be established as to whether or not it met the requirements for an inclusive pedagogy within the schools. Further, an interpretation of this research's findings as to how the respective schools implemented IBL would also require an understanding of this theoretical framework. It was challenging to find South African based research on IBL, particularly in relation to inclusion, and I found a limited amount of research conducted in South African independent schools. This research aimed to discover whether the same trends identified in the international studies held true in the South African context.

2.5. Conclusion

This chapter provided a review of the relevant literature on the inclusiveness of IBL, and all the relevant terms were defined in the conceptual framework. The theoretical frameworks that contributed to an understanding of IBL were the following: constructivism; a sociocultural approach; and, experiential and active learning. These theoretical frameworks were briefly explained and their contribution to IBL unpacked. Finally, this chapter deliberated on the current literature and research on inclusion in relation to IBL. The next chapter details and discusses the methodology used in the study to answer the research question.

CHAPTER 3: RESEARCH DESIGN

"When there is corroborating evidence from qualitative and quantitative data, conclusions may be drawn with more confidence, and generalization of qualitative findings becomes possible" (Bernhard, 2019, p. 63).

3.1. Introduction

The purpose of this study, as stated in Chapter 1, is to evaluate the effectiveness of IBL as an inclusive pedagogy. This evaluation is done from the teachers and learners' perspectives. It compares the extent to which there is congruence between their perceptions and experiences. This study aims to give teachers and learners a voice to describe their own experiences of IBL.

In order to achieve this aim, this chapter discusses begins with a discussion on the paradigmatic perspective and philosophical assumptions used in this study to examine IBL. The methodology utilised is then discussed in detail, namely a mixed methods approach, and the use of embedded design. In addition, I explain the instruments utilised to collect the data, as well as the context and participant selection. I will provide clarity on the procedures for data analysis and finally, address issues of trustworthiness and ethics.

3.2. Paradigmatic Perspective

The paradigmatic perspective and lens that I used to examine IBL was that of interpretivism. This paradigm proposed a view that showed the world as complex and ever-changing, where it was experienced, constructed and interpreted by people. It therefore used human interactions to build a subjective reality, and meaning was constructed through social interactions (Thanh & Thanh, 2015). Knowledge was not only understood through observation but was also constructed through individuals' subjective beliefs and values. This meant that knowledge was about the way people gave meaning to their lives (Thanh & Thanh, 2015). Relating this paradigm to the research, it showed the importance of appreciating every participants' understanding of IBL. It is their subjective experience of the pedagogy that would inform its application as an inclusive way of teaching and learning.

A second lens that I used to examine IBL was that of inclusion. It is important to be cognisant of how diversity in the classroom was considered to ensure that each learner had the opportunity to participate fully and meaningfully in their learning. Many of the studies I found were based on international literature. It is therefore valuable to educators and researchers, to gain insight into how South Africa has implemented and progressed regarding inclusion, especially with relevance to IBL. During my research in the three independent schools, it was vital to assess all the activities through the lens of inclusion, insofar as it helped to evaluate the level of inclusion that IBL afforded the learners. There were various societal and contextual challenges that impacted on inclusion (Engelbrecht, 2006). This meant that it was important to consider various mitigating and contextual factors, so that inclusive education was shown to be a continually developing ideal. That inclusion is not a fixed formula but adapts to the needs of the class. When assessing the participation of the learners in the IBL lesson, it was important to be aware that eternal factors, such as learners' knowledge and skills, might have an impact on the inclusive potential of this pedagogy.

Walton, Nel, Hugo and Muller (2009) looked at how inclusion was implemented in South African independent schools, which was the context that I chose to conduct my research. They highlighted a gap in the research in this context, as they found that most of these schools included learners with barriers and employed inclusive practices as defined by international literature but there was research lacking in this regard. It was an important part of my research to describe the various schools' approach to inclusion through classroom observations, teacher self-reflection questionnaires and reference to an acknowledgement of diversity in their planning. It was through locating the specific schools' values and overall approach to inclusion that I gained a clearer picture on how this might affect the development of their IBL lesson. This was relevant to my research, as it provided important contextual knowledge that helped to inform how the learners and teachers perceived their respective experiences.

3.3. Philosophical Assumptions

An awareness of the researcher's assumptions was important in a study, as these influenced the decisions made about research process (Scott & Morrison, 2006). Researchers bring their own world views, paradigms and beliefs to a study, which would inform the research (Creswell, 2007).

3.3.1. Ontology

Ontology is the researcher's position on the "nature of reality" (Scott & Morrison, 2006, p.85). The idea of multiple realities was embraced in this study, as it accepted that the participants' view of reality would be subjective and valid. The implications for this research was that the study would include numerous examples of the participants' quotations and the identification of themes that depended on their feedback received from observations, questionnaires and interviews. There should be evidence of differing perspectives because the individual's experience of the learning may differ (Creswell, 2007). The main ontological assumption that informed this study was relativism, because it assumed that there was no absolute knowledge. Instead, people's interactions influenced their perceptions of reality and their beliefs were informed by their society (Scott & Morrison, 2006). In this study, the participants' views on IBL were relative to their experience, and they were also influenced by their society, culture and school. An understanding of the participants' experience of this reality was based on their feedback via the self-evaluation questionnaires, extensive interviews and classroom observations.

3.3.2. Epistemology

Epistemology refers to how researchers know the reality that they try to describe, and it is closely linked to ontology. The epistemological assumption that informed this study was that of social constructivism, which is also an assumption linked to relativism. Social constructivism thus assumed that meaning was not created, instead it was constructed. There was a social dimension to this construction of knowledge, as humans were born into a culture that informed their understanding of meaning. In turn, this meaning could also be socially mediated (Scott & Morrison, 2006). It was thus important to understand the participants' perception of reality in this study. The interview process became a fundamental data-collection technique, because it provided the participants with an opportunity to expand on their own perceptions. Creswell (2007) stated that the relationship between the researcher and a participant was important, as it was through the

interview process that a participant's reality would be discovered. This meant that the researcher needed to spend time with the participants in their context, in order to lessen the distance between them and to become a part of their environment.

3.3.3. Axiology

Axiology articulates the role of values in research. The researcher needed to acknowledge that biases existed and that data was value-laden. According to Cresswell (2007), it was important to discuss these values openly, because they have an impact on the researcher's own interpretation as well as on the participants' narratives. This research had to establish the participants' values and attitudes regarding IBL and inclusion, as these views would have an impact on their feedback in all of the interactions with them. As the researcher, I needed to acknowledge that my own values have had an impact on this research, therefore it was important to place myself explicitly in this research and to recognise those views (Creswell, 2007). I particularly needed to state that I value IBL as a worthwhile pedagogy, because it could potentially accommodate all learners. This admission of my own bias might ensure that it would not necessarily impact on the participants' reflections.

3.3.4. Methodology

The research methods used in this study were informed by the researchers' ontology, epistemology and axiology. The research methods used were inductive, because these methods and strategies were shaped by the researcher's experience and they were also influenced by the process of collecting and analysing the data. As a result, I modified the study depending on the scope and details of the data collected (Creswell, 2007). The approach I adopted was a mixed methods research, with an embedded design. This meant that this study was mainly qualitative with a small quantitative aspect (Ivankova & Creswell, 2009). The qualitative aspect of this study was phenomenological, as it examined the participants' experiences of IBL. This study also tried to discover what the participants had in common as they experienced their learning (Creswell, 2007). The choice of methodological approach suited the ontology, epistemology and axiology discussed in previous sections. In the final analysis, I have endeavoured to present a composite description of IBL, which was based on all the participants' experiences (Creswell, 2007).

3.4. Research Methodology and Design

The approach chosen for this study was mixed methods, and the reason for this choice was that it combined both qualitative and quantitative approaches that allowed for a "fuller overall research picture" (Scott & Morrison, 2006, p. 158). It was pertinent to this study to collect not only the participants' one-on-one perspectives, but also to gather data on a larger scale by discovering the learners' overall experiences in the sample. This led to the employment of both qualitative and quantitative strategies as data-collection techniques. These strategies provided a more complex and comprehensive investigation (McMillan & Schmacher, 2010). The mixed methods approach facilitated my ability to provide a summary of the findings by using numbers as well as an in-depth description of contexts and experiences (Lodico, Spaudling & Voegtle, 2006).

This research design met some of the criteria for triangulation, because both the qualitative and quantitative data were collected at the same time. To some extent, the strengths of each method were used to counterbalance the weaknesses of the other. The main advantage of the mixed method design was that as it contained the strengths of both the qualitative and quantitative designs, therefore it might achieve a more complete and valid result (McMillan & Schmacher, 2010). These findings could be used to validate each other (Scott & Morrison, 2006). This study qualified as an embedded design, this is due to that fact that its approach and data-collection strategies were mainly qualitative in nature however there was a component of the quantitative approach embedded in the qualitative design. This means that the methodology that guided the study was predominantly qualitative in nature. However, the quantitative aspect, namely the questionnaires, also informed the research, as it helped to describe the learners' feelings across a broader context (Ivankova & Creswell, 2009). The qualitative and quantitative components of the research is explained in greater detail in the next section.

3.4.1. The quantitative component of the mixed methods approach

Quantitative designs come from a different theoretical background to qualitative designs. They value empirical, value-free data as opposed to personal perspectives, which may include anecdotes (Lodico, Spaudling & Voegtle, 2006). Reconciling these different views in one design required a clear notion of the purpose of using quantitative data for this study. The aim of the self-reflection questionnaires and the quantitative data extracted from the questionnaire, was to determine trends in the participants' experience. This

allowed for some objectivity in the description and measuring of the participants' experiences (McMillan & Schmacher, 2010). It also provided some statistical data that enhanced the information collected from the observations and interviews. The quantitative data was thus able to support the rich descriptions and observations that the qualitative data provided.

My sample group was relatively small, because there were just over one hundred learners sampled. The design was nonexperimental, which allowed for the data gathered via the self-reflection questionnaire to describe the learners' experiences of IBL, without any manipulation of the conditions they experienced (McMillan & Schmacher, 2010). This nonexperimental design was descriptive and to a certain extent comparative. It was descriptive as it described the learners' feelings of inclusion while they were learning. However, it was also comparative, because these experiences formed the basis of comparison among the three schools selected for this study (McMillan & Schmacher, 2010). Next, I turn to an explanation of the qualitative design component.

3.4.2. The qualitative component of the mixed methods approach

This research tried to interpret the participants' subjective experiences (Cohen, Manion & Morrison, 2011). It also aimed to gain a deep understanding of my research question (Creswell, 2012). While this research was a small-scale study, because it was located in three schools, it used an interpretive approach to understand the participants' views and experiences of IBL. A qualitative approach allowed for the gathering of anecdotal and reflective data, so that as the researcher, I gained an understanding of their experiences by attempting to explain their interactions within the IBL experience (Cohen et al., 2011). Using a qualitative approach, I aimed to describe and understand how IBL was applied within three specific contexts and to ascertain how inclusive these applications were. According to Lodico, Spaudling and Voegtle (2006), qualitative research is research which included interviews, observations and document analysis. All three of these components formed part of my data-collection strategy.

The advantages of using a qualitative approach were the following: it allowed the views of different participants to be explored; it permitted a profound investigation into my central phenomena, namely, IBL and inclusion; it let me explore the variables that I uncovered in the process of my research; it allowed for some flexibility; and, the direction

of the study could be guided by the participants' views. A disadvantage of qualitative research is that its findings were limited, and they cannot be generalised, because of the small scale of the research (Creswell, 2012).

The qualitative design of this study was phenomenological in nature, as I tried to discover the direct and personal experience of those involved in the study rather than assessing the context from an outsiders' point of view at face value: "It sees behaviour as being determined by the phenomena of experience rather than by external, objective and physically described reality" (Cohen et al., 2011, p.18). In this study, I attempted to gain an appreciation and understanding of the core of learners and teachers experience with IBL. The researcher was interested in gaining an individual's perspective of this study (Lodico, Spaudling & Voegtle, 2006). This made it important to understand the participants' subjective consciousness, because they were involved in a specific environment. The researcher could gain a meaningful understanding of this consciousness through the participants' reflection on their own experience (Koopman, 2017). It is this consciousness of the participants' experience with IBL that was reflected in the interviews. Referencing the teachers and learners' voices in my study, I used their lived-in and subjective experiences as the basis for my research. It was their interpretations and the meaning they attributed to their experiences that formed the basis for my findings on how effective IBL was as an inclusive pedagogy for the following reason: "The phenomenologist's role is to 'give voice' to those perspectives" (Lodico, Spaudling & Voegtle, 2006, p. 16). An account of the sampling strategies employed follows in the next section.

3.5. Sampling

3.5.1 Context

The study was conducted in three independent, ISASA-affiliated schools in the northern suburbs of Johannesburg. These schools were all implementing IBL in the classroom. I focused on learners in the intermediate phase, and the choice of grade depended on which one was currently running an IBL lesson. The schools were all monastic girls' schools, which limited the data collected. To avoid any mitigating factors skewing my results, I endeavoured to ensure that the schools were as similar as possible to each other. This required that the ethos of the schools held similar values towards learning, and that was the reason why I focused only on girls' independent schools. At these schools, the parents

were required to pay significantly higher fees, because these independent schools were not state subsidised. This had a noteworthy impact on the research, as the majority of the children were from relatively affluent families who could afford these fees. There was thus less socio-economic diversity among the participants.

3.5.2. Selection of participants

The selection of participants for this study was based on non-probability sampling. I targeted particular groups while being aware that they did not represent the wider population. The reason for choosing this form of sampling was that it suited the small scale of my research. A disadvantage of this form of sampling was that it hindered the generalisability of my results (Creswell, 2012). Initially I used a form of non-probability sampling, known as convenience sampling, for the teacher interviews, class observations and learner self-reflection tasks. Next, I used purposeful sampling to choose participants for the learners' interviews and this selection was done through a screening process (Cohen, Manion & Morrison, 2011).

The use of convenience sampling meant that I used individuals who were proximate to me or those who were available at the time of the research to serve as respondents. It was all about ease of access to the participants (Cohen, Manion & Morrison, 2011). In the case of my study, I conducted the research at the school where I am currently employed, as well as at two other schools in the surrounding area. The selection criteria for the convenience sample were the following: the schools had to be currently implementing IBL; and, they had to be an ISASA independent girls' school. After consultation with the heads of the respective schools, I used their suggestions to select a class and teacher in the intermediate phase that was currently implementing IBL.

The second method for the selection of participants was through the document analysis and screening of the learners' self-reflection tasks. I used purposeful sampling to identify learners who indicated in their self-reflection task that they felt some form of exclusion. This allowed me to elaborate on the reasons for these exclusive experiences and to get input from the learners as to what would have made the experience better for them. The reason for using purposeful sampling was it provided a way to select knowledgeable participants who were able to describe their experiences of exclusion (Lodico, Spaudling & Voegtle, 2006). In this study, the knowledgeable people were the learners who, for

whatever reason, felt excluded from the learning process. This form of purposeful sampling was negative case sampling, because it sought to disprove the theory that IBL was an inclusive pedagogy (Cohen, Manion & Morrison, 2011).

3.5.3. Sample size

The aim of my sample size was to include one class from each of the independent schools so that there would be a total of three classes. These classes were in the intermediate phase and they were selected at the discretion of the school. It depended on whether a teacher was currently implementing an IBL unit of work with their class, so two Grade 6 classes and one Grade 4 class were selected. The sample size was supposed to be three full classes of about 25 to 28 learners per class. It also included one teacher from each class, which made a total of three teachers. However, the size of the sample had to be adjusted, because there were differences in the ways IBL was implemented at the three schools. Two of the schools implemented their IBL programmes across the whole grade, which increased the size of the sample. All learners completed the self-reflection task as part of their class work. However, I only analysed the tasks and observed learners, if both parents and learners gave their permission to be part of this study. The size of the sample for learner interviews was therefore dependent on the feedback received from the learners' self-reflection task, as well as whether I received consent from both the parents and the learners. Table 3.1. summarises the number of participants invited to join the study. The details of those who participated is explained further in Chapter 4.

School	Grade	Class/Grade	Number of Learners	Age Range	Scheduling of IBL	Timeframe of IBL lesson (approx.)	Teachers
School 1	6	One Class	28	11-12 years	Weekly timetabled	1 to 2 (2-hour lesson/s)	1
School 2	6	Whole Grade (3 classes)	74	11-12 years	Weekly timetabled	6 to 7 (1 and a half hour lessons) plus extra time	1
School 3	4	Whole Grade (3 classes)	66	9-10 years	Collapsed timetable for a week	Full day for 3-4 days	3

Table 3. 1. Participants invited to join the study

3.6. Data-Collection Instruments

I chose a variety of qualitative and quantitative data-collection instruments to inform this study. This choice acted as a form of triangulation, which was a process of validating evidence from different sources and through different means (Creswell, 2012). Using an assortment of data sources and information from different individuals allows researchers to enhance the accuracy of their findings (Creswell, 2012). The second reason why I collected the data from multiple sources using different means was to ensure that the descriptive detail was rich and varied. This added to the narrative as well as understanding the phenomena under study. In the next section, I discuss the various data-collection instruments that I chose.

3.6.1. Document analysis

A valuable source of data is document analysis, which helps researchers' understanding of phenomena in a qualitative study. Documents consist of private and public records. The advantages of document analysis are that they are in the participants' words and they are ready for analysis without any need to transcribe them. However, there are disadvantages too, because some documents could be inaccurate, or a challenge to read as well as difficult to locate (Creswell, 2012). I used two types of documents in my analysis in this study.

3.6.1.1. Planning

A teacher's lesson planning could be considered part of the private and the public record. It was important to obtain permission from teachers and principals to use a copy of the planning for the IBL lesson for the following reasons: the information found in the plan showed the teacher's interpretation of IBL; how the learners' needs were taken into consideration; and, how the teacher aimed to include all of the learners. By including this planning in the document analysis, it provided an invaluable background to a teacher's understanding and interpretation of IBL. It had the potential to provide details on scaffolding and accommodations that were taken into consideration when planning the unit. Furthermore, it also helped to inform the classroom observation checklist.

3.6.1.2. Self-reflection task

The self-reflection task was set up and administered by the researcher to be given to the learners at the end of the IBL lesson but before the final presentation of work by the learners to their class. It was two pages long, and it allowed each learner to reflect on their

group work, their participation and contribution during the IBL lesson, on what they had learnt and their emotions. This was a private record that was not shared with the class teacher. This task was important for many reasons: first, it provided an overview of the feelings and experiences of the sample as a whole; secondly, it provided valuable statistical data of the overall effectiveness of IBL, which allowed for quantitative analysis; and thirdly, it provided the basis for selecting which of the learners I interviewed.

3.6.2. Classroom observation

I used participant observation, as well as an unstructured form of observation when I observed the participants in the classroom. This form of observation involved watching the participants in their natural social setting and practising their everyday behaviour. It involved describing their context and potentially focusing on one aspect of interest as the observation unfolds. This might lead to my selecting another area to gather additional evidence (Bell, 2014). Simpson and Tusan (2003) noted that the researcher had the dual role of using empathy to gain access to an insider's view as well as being a neutral observer. As part on this unstructured observation, I made field notes as well as used a simple observation checklist that was based on pre-established criteria.

There were two areas that I focused on while doing the classroom observations. Each observation took approximately two hours at each school. I focused at first on the teacher's instructions and the scaffolding used by the teacher. I assessed this aspect in conjunction with the teacher's planning, which helped me to get an overview of the teacher's understanding and experience of IBL. Secondly, I observed the interactions between the learners, as they completed the inquiry-based task. This was to gauge the learners' experiences and to look for any obvious signs of exclusion. As an inquiry-based lesson could take a significant amount of time to complete, I consulted the teacher as to the best times to observe the class, so that I would not disrupt the process. According to Bell (2014), for researchers to gain the most value out of their observations, they needed to be clear about the purpose of the observation and the questions they were trying to answer. It is with this idea in mind that observations need to be focused on the interaction that demonstrate inclusive or alternatively exclusive practices. These classroom observations became important as they allowed the researcher to watch for any interactions that displayed evidence of exclusion. A comparison between the self-

reflection task and learner interviews then yielded a deeper understanding for these classroom observations.

3.6.3. Interviews

A research interview is "defined as a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information" (Cohen, Manion & Morrison, 2011, p. 411). An interview might have a higher response rate than questionnaires, although questionnaires could encourage more honesty, as they would be completed anonymously. There were different types of possible interviews and I employed a different kind of interview with the learners and the teachers. The teachers were more in depth and were conducted in a way to gather the teachers' full experience of IBL. The learner interviews on the other hand were shorter and were used to qualify their answers from the self-reflection task. I audio-recorded the interviews, so that I could focus on conducting the interview while capturing the interviewee's responses accurately and minimising any form of bias.

3.6.3.1. Teachers

I aimed to interview one teacher from each of the three schools. However, this had to be adapted at one of the schools, as three teachers implemented and planned the lesson together, therefore I interviewed them as a group. My objective was for each interview to be comprehensive, but no longer than one hour, and each interview took about forty minutes. During that time, I was able to garner the teacher's understanding and experience of IBL and his/her interpretation of IBL as an inclusive pedagogy. The interviews were in a semi-structured format, as the questions were prepared in advance. But I used open-ended questions, which allowed me to probe, to digress, and to follow and explore new directions with the participants (Cohen et al., 2011). I used a general guide of questions during these interviews that related to specific topics. This ensured that a common topic of information was discussed with all the teachers. However, I did not use a set of standardised questions, which were pre-ordered with predetermined language (Gall, Gall & Borg, 2007). This allowed for a more exploratory approach to a topic, which enabled individual responses based on a teacher's specific context. It was important for this study to gain an understanding of how the teacher's experience of IBL contributed to enhancing inclusion in the classroom.

3.6.3.2. Learners

I interviewed a number of learners, but the exact number of participants in this research was only finalised after I had analysed the results from the self-reflection task and my classroom observations. The interviews with the learners were much shorter in duration than those conducted with the teachers, as each of the learners' interviews was no longer than two minutes. These interviews allowed the learners to describe and elaborate on their experiences of possible exclusion during the IBL task. The format of the interviews was unstructured. The interviews were a short conversation that focused on the learners' responses to the classroom interaction that I had observed as well as the results of the self-reflection task. It was important to gain an understanding of how the learners experienced the IBL pedagogy, and whether this indicated that this pedagogy was inclusive or exclusive in practice.

3.7. Data Analysis

Due to the study being predominantly qualitative in nature, my data analysis was mostly guided by this design. However, I examined the qualitative and quantitative data together, and coordinated results when analysing the data (Ivankova & Creswell, 2009).

The data obtained from the qualitative research was analysed at different levels, recognising that it was multi-layered (Cohen et al., 2011). Data analysis happened throughout the study and it guided some of the collection of the data. According to Lodico, Spaudling and Voegtle (2006), there were six steps that a researcher should follow in a qualitative study. I used these steps to guide my analysis of the classroom observations, the participants' interviews and the documentary analysis of the teachers' planning.

3.7.1. Preparation and organisation of the data

When analysing the interviews, the first step was to transcribe the audio-recorded interviews verbatim. Next, I organised concurrently all the data I had collected according to the different schools.

3.7.2. Review and exploration of data

At this stage, I needed to get an overall understanding of the data I had collected. I made a note of any important aspects that stood out, then evaluated whether there was enough

data to help with the answering of the research question (Lodico, Spaudling & Voegtle, 2006).

3.7.3. Coding data

Coding is the "process of identifying different segments of the data that describe related phenomena and labelling these parts using broad categories" (Lodico, Spaudling & Voegtle, 2006, p. 305). I coded the data, which were the results of the participants' answers in the interviews and the questionnaires, according to the themes that emerged.

3.7.4. Building descriptions of the people, places and events.

Next, I described the learners, teachers, schools, classrooms, events and experiences, which meant combining field notes, the observation checklists, data analysis and interviews to provide thick, rich written descriptions.

The quantitative data, namely, the questionnaires, were analysed concurrently with the qualitative data. This meant calculating the percentages of answers to specific aspects of the questionnaires. I did this for individuals as well as for each school, then calculated the mean too. The information obtained from the Blob Tree was depicted as a frequency of answers. All these calculations were illustrated using graphs for ease of comparison.

3.7.5. Constructing themes and testing propositions

This was the level where a deeper analysis occurred, as it was important that I examined the coded data for themes that helped to answer the research question. Using these themes, I needed to reorganise the data into theme-based categories. I also compared the quantitative data in relation to the themes extracted from the qualitative data. At this point, I evaluated the data to find out to what extent it either confirmed or contradicted the research question. This was done by comparing the differing perspectives of the different participants (Lodico, Spaudling & Voegtle, 2006).

3.7.6. Reporting and interpreting data

This was the final stage of data analysis and it involved reporting and writing up the data. It included graphs of the trends noted from the quantitative data as well a discussion of the relevant themes from the qualitative data. The reporting format was largely determined by the findings that emerged from the data collected in relation to the research questions.

It was important to be aware of researcher's subjectivity that might affect the selection of relevant information, because of the richness and volume of the data that required sorting (Cohen et al., 2011). Trustworthiness is something that I, as the researcher, needed to pay particular attention to when analysing the data that was collected during this study. This is to ensure that the obtained data and the subsequent report was an accurate reflection of the learning experience of my participants and the overall learning environment.

3.8. Trustworthiness

Due to this study being a mixed methods study, I made use of the terms associated with both qualitative and quantitative approaches. I focused on the issue of trustworthiness and its four associated concepts namely transferability, credibility, dependability and confirmability. As this study is mostly qualitative in nature, however, I have also referred to quantitative terms, such as validity and reliability. Research validity is defined in two ways firstly whether the data-collection tools being used to measure are accurate and secondly, whether they are measuring what the researcher would like them to measure (Winter, 2000). Winter (2000) asserts that qualitatively validity was a matter of degree rather than a final destination: It was the inferences and meaning given to the data by participants that was important. In qualitative research, reliability could be seen as a match between what the researcher recorded as data and what actually occurred in the research context. The question that needed to be asked about reliability was: Did the researcher record and present an accurate and comprehensive account of events? (Cohen et.al, 2011).

3.8.1. Transferability

This was the extent to which results could be transferred or generalised to other settings (Lichtman, 2012). It is also referred to as applicability. Quantitatively, Krefting (1991) defined applicability as the management of threats to external validity and the ability to generalise to a larger community. Qualitatively, Krefting (1991) highlighted two perspectives, firstly is that generalisability to a larger population was not seen as so important, because each context was unique. Secondly, was that the results should be able to be transferable to at least two contexts. Considering these perspectives, for transferability to be achieved a thick description of the context or setting where the research was conducted was required (Scott & Morrison, 2006; Krefting, 1991).

To address concerns around transferability, my description of the contexts in Chapter 4 were detailed. This included not only the context, but also any comments about my observations and the participants' interviews. To attempt to ensure external validity with the self-reflection questionnaire (quantitative), I provided as little oral input as possible when administrating the questionnaire, apart from reading it through with the learners. This was done to ensure that the results could be applied to some other cases and studies (Scott & Morrison, 2006).

3.8.2. Credibility

Credibility is referred to as a truth value, which determines whether researchers are confident in the truth of their findings. This judgement is based on the design, participants and context of the study (Krefting, 1991). From a quantitative perspective, this is judged by using the measures of internal validity and validity of the instruments, whereas from a qualitative viewpoint, it is viewed by looking at the participants' lived-in experience (Krefting, 1991).

To ensure credibility, I audiotaped the participants' interviews so that their reflections were accurate, and I replicated their perceptions and feelings truthfully, by transcribing the interviews verbatim. I made detailed field notes on the observation page about what I observed while watching the learners and teachers' interactions. The internal validity of the questionnaire (quantitative) was assessed according to whether it was accurate and whether it matched reality (Scott & Morrison, 2006). This was measured, through triangulation, against the learners' various reflections in interviews and my observations in the classroom.

3.8.3. Dependability

Dependability is the need to consider the changing nature of the context during the research (Lichtman, 2012), while consistency looks at whether the study could be replicated in a similar context (Krefting, 1991). From a quantitative view, reliability depends on whether a repetition of the study would produce the same results. However, variability is expected in a qualitative study, and the researcher has to account for and explain this variability (Krefting, 1991).

I ensured that there was a triangulation of the data, by crosschecking the evidence and findings and I collected different kinds of data (Scott & Morrison, 2006). In addition, I

used a variety of different instruments: interviews, questionnaires, observations and document analysis. This ensured that I was able to compare the information collected about the same phenomenon. By administering the same questionnaire in the three different schools, it provided similar results. I was able to locate some variability in the data collected between the three schools and to account for this variability.

3.8.4. Confirmability

Confirmability is the extent to which the results can be confirmed or substantiated by others (Lichtman, 2012). Neutrality is freedom from bias in the process and results of the research. Quantitatively, this aimed at objectivity, which could be achieved through rigour in methodology and by establishing a distance between the participants and a researcher. However, in a qualitative study, confirmability could be achieved by decreasing the distance between a researcher and the study's participants, so that there was lengthy contact between them (Krefting, 1991).

Due to this study being mostly qualitative in nature, it was important that I spent a significant amount of time in the classroom observing the interactions among the learners as well as between the learners and the teachers. There were various informal conversations and discussions surrounding these interactions, thus I was able to gain a good understanding of the subjective experiences of the various participants. However, I also had to maintain some distance from the participants, because if my relationship with participants was too close, then this could have affected my judgement. Other factors that I needed to take into consideration during the observations included: a lack of awareness of other important contributing events; the sample might not be representative; the observer's presence might change the participants' behaviour; and, the researcher might become too attached to participants. It was, therefore, important to keep all these factors in mind in order to guard against them or to factor them into the research findings (Cohen et al., 2011). It is important to be aware that an observer always has their own interpretation of the events that they observe, and it is therefore vital that the researcher is aware of this and endeavours to be a neutral as possible (Bell, 2014).

A potential cause of bias during the interviews could be either the characteristics of the interviewer or the interviewees as well as the content of the questions. To help avoid this bias, it is important to be aware of the baggage and ideologies that might be brought into

the interview process. A way of managing bias could be to use a highly structured interview, where the wording would be carefully considered (Cohen et al., 2011). In this study, I used semi-structured interviews for the teachers, where the phrasing and wording of the questions were balanced between the interviewer's objectivity and immersion. I allowed the interviewees to do most of the talking during the interviews and used questions to probe their answers further, but I avoided including my own views and perceptions in these interactions.

3.9. Ethical Considerations

While gathering information for a qualitative study, a researcher asks in-depth, descriptive and personal information, therefore the researcher needs to establish a certain level of trust with the participants. Thus, there were ethical considerations that needed to be considered when doing this study (Creswell, 2012).

3.9.1. Informed consent

Informed consent meant that the participants have been given all the information about the study and its possible risks. They should be informed that their participation is voluntary and that they could withdraw from the research at any time in the process without any consequences (Lodico, Spaudling & Voegtle, 2006). To acquire the support of participants, the researcher should clearly explain the purpose of the study to them. It was vital that the researcher did not employ any deception about the nature of the study (Creswell, 2012).

After ethics approval was granted by the university, the school principals were contacted. They were provided with information, which outlined all the relevant information pertaining to the research. The research questions, the study's focus, as well as the methodologies used during the research, were defined in detail. I requested permission to conduct research at their schools, and the principals signed consent forms to allow me to do so. In discussion with the principals, a suitable class was selected to be part of the research.

However, participation in this research was voluntary, and the teachers and their classes were under no obligation to participate in this study. There were thus additional consent forms that needed to be signed before this research could start, because the teachers also needed to sign consent forms as proof of their voluntary participation. The teachers gave

me consent to do the following: to use information from their IBL lesson planning for a documentary analysis; to interview them individually; for these interviews to be recorded by using an audio device; and, thereafter for the recordings to be transcribed.

In addition, consent forms needed to be signed by the learners' parents/guardians/caregivers as proof of their voluntary participation. The learners and their parents/guardians/caregivers gave their consent to the researcher to do the following: to observe the learners during their classes; to use information from the documentary analysis of the learners' self-reflection task; to interview individual learners; for these interviews to be recorded by using an audio device; and, thereafter for the recordings to be transcribed. While there were some learners whose parents did not give them permission to be involved in the study, they were still part of the class. These learners were included in all aspects of the classroom routines and inquiry-based lesson, although their interactions during the classroom observation were neither noted nor were their self-reflection tasks included in the data collected by the researcher.

3.9.2. Confidentiality

Confidentiality was adhered to throughout the research. It was reflected in the consent forms, as well as the verbal assurances given to the principals, teachers and learners by the researcher. My contact details and my supervisor's contact details were given to all the participants in case they or the learners' parents/guardians/caregivers required more information. I guaranteed that no information would be discussed with anyone else and that the only person I could share information with was my supervisor. This meant that no information would be shared among the schools, within the schools or with any of the participants. In addition, the participants' interviews were regarded as confidential and no information would be shared with a school's management. This research thus aimed to encourage open dialogue and honesty. However, the final research report would be shared with the schools once it was completed and had been evaluated by the university.

3.9.3. Anonymity

The participants' anonymity was of paramount importance and pseudonyms were used throughout this research report (Creswell, 2012). The assurance of anonymity was stated on the consent forms, and I gave verbal assurances to the principals, teachers and learners too. These participants were guaranteed that their names should not be identifiable in

print, because they would be given pseudonyms and/or codes in the final report. As I conducted this research at the school where I am currently employed, this limited this promise of anonymity to some extent in that my relationship to the school would give an indication that this school was part of my sample. However, the anonymity of all participants as well as the other two schools was high.

3.10. Conclusion

This chapter described the methodology and design of the research study. It provided the reasons for the adoption of a mixed methods approach with an embedded design. It t presented the paradigmatic perspective, with the various philosophical assumptions, that informed this study. The adopted approach was phenomenological and nonexperimental in nature. Both the context and the criteria for the participants' selection were explained. The various data-collection instruments used in the study included the following: documentary analysis of the teachers' planning and the learners' self-reflection tasks; classroom observations; and, both teachers and learners' interviews. There was an explanation of the basic data analysis and presentation procedures, and I addressed issues of trustworthiness and ethical considerations. The following chapter will present the data collected during the study and this information is structured around the different data-collection techniques utilised.

CHAPTER 4: PRESENTATION OF DATA

"I hear and I forget, I see and I remember, I do and I understand" (Confucius, 551 BC-479 BC).

4.1. Introduction

The main question that informed this research was to determine to what extent the IBL pedagogy promoted inclusive participation by the learners. To answer this question, I had to investigate the teachers' understanding of the learners' needs in an IBL lesson. Secondly, I needed to explore how the teachers' experiences of the IBL pedagogy contributed to the promotion of inclusion. Thirdly, I investigated whether the learners' experience of the IBL pedagogy indicated inclusive practices. Finally, I considered the extent to which individual participation in IBL, from teachers and the learners' perspectives, reflected congruence with their respective experience of inclusivity. The main aim of this study was to answer these questions from the teachers and learners' perspectives, so that they had the opportunity to voice and describe their own experiences. Keeping these questions and aim in mind, I present the data and the data-collection tools, while unpacking each of them separately in this chapter.

4.2. Synopsis of Research Site

In order to protect confidentially and anonymity, the following pseudonyms were used for the participants in this study:

Pseudonyms for Various Participants		
Schools	Teachers	Learners
Kilo	Gamma	Kilo 1, 2, 3…
Sierra	Chi	Sierra 1, 2, 3…
Bravo	Mu, Alpha, Zeta	Bravo 1, 2, 3 …

Table 4.1. Pseudonyms for various participants.

4.2.1. Schools

I conducted my research in three schools in the Northern Johannesburg area. These schools were monastic, girls' schools, independent and affiliated to ISASA. All these schools used IBL in their teaching, which had been introduced relatively recently into their curriculum, within the past two or three years. The three schools adjusted IBL to their respective needs, which meant that they implemented IBL in slightly different ways.

4.2.1.1. Kilo School

The Kilo School's approach to IBL was to apply it to a whole grade. This meant that this school scheduled an hour and a half per week throughout the year in order to embark on different IBL units. The aim was for the whole grade to work on the IBL lesson together during this time, and the school hall was used for these lessons to accommodate all the girls comfortably. There were times where the hall was being used for other activities, with the result that the girls were split between three classrooms.

4.2.1.2. Sierra School

The Sierra School's approach to IBL was planned so that it could be implemented in the whole grade or in individual classes, and this decision depended on the requirements of a specific inquiry. There was an IBL lesson, which was part of the timetable throughout the year, and it was applied across the curriculum. The inquiry I observed was with a single class and teacher within one classroom. This contrasted with Kilo School and Bravo School, where I observed a whole grade and numerous teachers.

4.2.1.3. Bravo School

Bravo School's approach was to suspend the timetable at the end of a term, then to use this school time to work exclusively on a specific IBL lesson. The whole school would participate in different inquiry tasks at the same time, while each grade worked together on a particular task. This school's approach to IBL was more problem-based than answering a specific question. The furniture was removed from one of the classes, so that the children could move around in the class freely, and they were also able to use the outside spaces.

4.2.2. Teachers

The teacher's role became more of a facilitator while doing IBL in the three schools, which fulfilled one of the criteria for an inquiry-based lesson. All the teachers planned the IBL lesson, then they implemented it by assisting the learners. However, each of the schools assigned different roles and responsibilities to the teachers.

At Kilo School, one of the teachers (Gamma) took control of the unit by planning and implementing it for the whole grade, while other staff assisted her. In the lesson I observed, Gamma was helped by two staff members, who were in separate venues as the grade was divided into their three separate classes. At Sierra School, the teachers planned

collaboratively, but each teacher took responsibility for the implementation of a specific lesson with her own class. I observed Teacher Chi at this school. While at Bravo School, the teachers planned collaboratively (Teachers Mu, Alpha and Zeta) and they were equally involved in the lesson's implementation.

Demographic Information About the Teachers Who Were Interviewed				
Teacher's name	School	Teaching experience	Experience –IBL in South Africa	Additional information
Gamma	Kilo	33 years	2 - 3years	Taught various grades including music.
Chi	Sierra	15 years	1 - 2 years	Taught at Sierra School for 15years.
Mu	Bravo	5 years	1 - 2 years	Worked in an internship before teaching, and is currently studying to improve qualifications.
Alpha	Bravo	19 years	1 - 2 years	Has taught in different environments including overseas.
Zeta	Bravo	5 years	1 - 2 years	High school qualified. Taught IBL in Bangkok.

Table 4.2. Demographic information about the teachers who were interviewed.

Table 4.2. shows that the teachers' experience ranged from five to thirty-three years in total. They had a variety of different teachers' experiences that spanned their respective careers. However, their experience of IBL was short in South Africa, because it was between one to three years.

4.2.3. Learners

The sample size of learners varied at each of the schools, because Kilo School and Bravo School implemented IBL with the whole grade. However, Sierra School implemented IBL with an individual class. The following table depicts the learners' grade and the size of the sample at each of the schools:

Learners' Sample Size			
School	**Grade**	**Number of learners in the grade/class**	**Final sample size based on permission letters that were returned.**
Kilo	6	74	52
Sierra	6	28	23
Bravo	4	66	42
Total learners in the sample:			117

Table 4.3. Learners' grades and the size of the sample at each of the schools.

4.3. Data-Collection Tools

In order to present the data, I unpacked the information from each of the data-collection tools separately. The teachers' interviews helped to answer the questions on their respective perspectives, understanding and experience of IBL in the promotion of inclusion. In turn, the learners' questionnaires and interviews assisted in gaining an understanding of their perspectives and understanding of IBL as an inclusive practice. The lesson observations, unit planning, questionnaires and various interviews should aid in gaining a deeper understanding of whether there was any commonality and congruence between the teachers and learners' perspectives. This data provided evidence to support my answer to the main question. It also determined the extent to which the teachers and learners' experiences of the IBL pedagogy promoted learners' inclusion. The various data-collection methods aided with the triangulation of the results, which ensured an accurate representation of this study's findings. In the next section, I report on the lesson planning and its impact on guiding the lessons in practice.

4.3.1. Lesson planning

There was evidence of extensive planning and discussion for all the observed lessons. The lesson plan at the Kilo School indicated that there was a two-part overall question that guided the inquiry, thus this plan fulfilled one of the criteria for an inquiry-based lesson. The two-part question was: "What is the value of exploration? Is it the same for the explorer and the explored?" There were other questions that needed to be answered in order to build towards the main question. The planning indicated the following: the overall objectives, the core skills, and the subject-specific, digital-tech and thinking skills that the unit aimed to develop. It also indicated the factual and conceptual knowledge the learners should acquire, as well as the links made to specific subjects. This task included aspects of English, Mathematics, History and Geography, which meant that IBL was implemented across the curriculum. The planning also described the various tools and strategies for learner assessment, and it included a list of both the formative and summative assessment tasks. There was an estimated time for the unit's completion that was five weeks. Specific accommodations and scaffolding were not mentioned in the planning. However, as part of the core skills, there were specific strategies mentioned that could encourage the development of various communication and problem-solving skills. For example, there were questions in the planning that encouraged listening with empathy

and understanding, such as: “What is it?” and “So your idea is …?” This planning was detailed, and it provided clear guidance and understanding of the lesson’s goal. The planning was supplemented by a mobile application on their iPads called Showbie. The girls registered with this app and the lesson’s material was provided on this platform. This included the instructions for the task, various questions that helped to scaffold the task and self-evaluation rubrics.

The purpose of the lesson planning for Sierra School was different to Kilo School, because it included topics that were to be covered throughout the entire term, instead of a specific section of work. There were six overarching questions and numerous topical questions that contributed towards the answering of the overarching questions. The presence of these questions fulfilled one of the criteria for an inquiry-based lesson. In addition, the planning included concepts that should be highlighted throughout the inquiry process. These concepts included the following: a Round Square ideal; an attribute of a Sierra School’s girl; a big idea; essential understanding; and, transdisciplinary concepts. The plan included information on what the learner could know, be able to do and the concepts she should be able to understand by the end of the planned unit. As was found in Kilo School’s planning, the formative and summative assessments were described, but in far more detail at Sierra School. This planning was specifically focused on the Social Sciences, namely, History and Geography. There was no mention of specific accommodations to ensure the inclusion of all the girls. However, there were specific activity descriptions mentioned that encouraged scaffolding through rubrics, think-pair-share and questions. The planning was detailed, and it provided information on the overall inquiry goal and focus for the entire term.

The lesson planning for Bravo School was not included in a specific planning document, but it was found on a PowerPoint presentation that formed part of the introduction given to the girls. Instead of using a question, as found at Kilo and Sierra Schools, the teachers at Bravo School expressed their inquiry in the form of a problem. Due to this shift in focus, the inquiry could be classified as PBL, and the problem given to the girls was the following: “Water, water everywhere and not a drop to drink.” This problem’s focus was on the floods in Mozambique and the lack of drinkable water. The PowerPoint described the various steps that the girls needed to follow to complete the inquiry. Various

documents were included to help scaffold their learning. Due to no formal planning document being available, there was no formal mention of specific accommodations, concepts or skills that needed to be covered. The next section detailed the researcher's observations during the implementation of the lessons at the three schools.

4.3.2. Classroom observations

I observed one lesson at each of the schools, which meant that I observed in total three lessons. However, each lesson spanned a number of different days, and included a number of sessions. I watched the introduction to all of the lessons, then observed the girls while they were working on the task. In this section, I started by providing a brief summary of each lesson, then I unpacked each classroom observation separately. Next, I discussed the commonalities and differences observed in the different environments.

4.3.2.1. Description of lessons

At Kilo School, they started their IBL with a guest speaker. She spoke about her expedition to the top of Mount Everest, and the girls were fully engaged, as they were able to ask the speaker questions. The second session involved the girls researching their own explorer within a group of six, where the aim was for the group to construct a dodecahedron, which contained pertinent information. This activity was completed in three separate venues with a teacher facilitating in each of the venues. The final session was a dinner party, where learners presented their information to each other and the teacher. A difference in approach was shown by Kilo School: the teachers highlighted the main question in their planning, but they omitted to mention the question to the girls. This had an impact on the girls' ability to learn around the central question or problem. As a result, there was some confusion at the beginning about the school's expectations from the girls.

At Sierra School, the first session was an explanation of the questions and a teacher-led discussion on the different diseases that had an impact in Africa. The girls were given the task to research their chosen disease in groups of four. The question and key words was written on the board to help guide their inquiry, and the overall aim was a group presentation of their findings to the class.

At Bravo School the introduction included a PowerPoint presentation to the Grade 4s, where several elements were highlighted and the problem of lack of available drinking water, was given to the girls. Then they were split into pairs, and they were given the following instructions: to research; draw a plan; construct their invention; devise a presentation; and, finally to present their findings orally to the rest of the grade.

4.3.2.2. Commonalities in the lessons

Commonalities observed in all three schools were that all the learners were engaged in the tasks, because they interacted with one another, and were able to participate actively. The girls were mostly on task, although there were times that they talked about other topics in their groups, or they were distracted by their devices. The focus of the lessons was on 'What needed to be done?' and 'How should it be achieved?' There was an emphasis given by the teachers, which ensured that all the learners were able to participate in the learning. This was evident at the three schools. There was no evidence during the lesson of any deterministic beliefs about ability, as all the girls were treated equally and given the same tasks. These tasks were generally not modified in any way. However, there was scope for the learners to modify the tasks themselves, as they worked with them. For example, while working on the topic of diseases, the learners at Sierra could make the following choices: what they wanted to include; what diseases to select; how they wanted to divide tasks in their groups; and, how they wanted to present their information. There was no evidence of any difficulties that the girls might have experienced. Instead, all the learners appeared to feel supported, and no one expressed an opinion or portrayed any learner as having a deficit in any way.

It was important to note that the general ethos of the three schools was inclusive, and the girls seemed comfortable interacting with each other and the staff. There were authentic teachable moments throughout the learning process that were utilised by the teachers at these schools. The energy in the learning space was one of mutual respect and cooperation. There was a high motivation to learn from most of the learners and overall a productive tone was set. The learners were neither nervous nor suspicious of my appearance in the classroom. At Kilo School, one of the learners was comfortable enough to ask me, in my role as an observer, some questions about the task.

4.3.2.3. Teacher intervention and mediation

In the three schools, there was evidence of teacher mediation during the task and various forms of scaffolding were present. The learners were able to get assistance whenever they required it: after the teachers had presented their introductions, they were involved with the learners while they were working. These teachers walked around and facilitated the different groups' discussions and their research. The teachers asked questions that probed the learners' answers to encourage discovery, helped with technology, kept the girls focused on their tasks, and they were vigilant about redirecting girls who might be off task or topic. It was evident that there were generally a variety of strategies used to support the learners. This allowed the girls to fulfil the requirements of the task and it encouraged all-round participation. The teachers approached all learners in a respectful and dignified manner. During one of the sessions, I observed that one of the teachers was less involved in mediation and her interaction with the girls was limited. This resulted in the girls having a reduced focus, where they were distracted and not meeting the task's requirements. However, this was remedied at a later session when a different teacher was able to re-explain and therefore refocus the learning. I observed different forms of scaffolding, such as the use of checklists, rubrics, targeted questions, repetition, listed instructions, key words, presentations, conversations, QR codes, thinking-skills maps, cooperative group work strategies and other class management strategies that directed resource location. All this scaffolding contributed to making the inquiry more structured rather than something that was unstructured.

4.3.2.4. Peer collaboration

The learners were actively involved in their learning, and the three schools set up the inquiry so that it encouraged collaboration and social interaction. Kilo School's used groups of six members who were randomly selected to encourage heterogeneous groupings. At the Sierra School, the group consisted of four members. These were also heterogeneous groups, where the learners selected the topics that interested them, and then they were grouped according to the selected topic. Bravo School decided to put their learners into pairs, as the teachers felt that they worked better in pairs than in bigger groups at their age in Grade 4. These pairs were selected by their individual class teachers according to different criteria, such as peer relationships and ability, in order to group learners who were well suited to working with one another. The result was mostly

academically heterogeneous pairs. At times, groups of three were created, because the numbers of learners did not allow for an even split. The learners were able to work independently in these groups, although there was evidence, based on class observations and interviews, that they helped and supported each other, and used the available teacher's support. However, there was also evidence of conflict in these groups, because some of the members disengaged from the task, while the others continued to work. This was particularly evident in the younger learners at Bravo School, and this mostly happened while they were working on shared laptops. Some of the groups were able to resolve these issues with their peers; others required a teacher's intervention.

4.3.2.5. Technology

Technology was used extensively in all three schools. At both Kilo and Sierra Schools, the girls' research was completed with the help of their iPads, as each girl had her own personal device. The iPad was also used for the group's presentations at Sierra School. However, at Kilo School, there was evidence of exclusion when one of the girls forgot her device at home and she was unable to participate until the iPad was delivered to her.

In Bravo School, each pair had one laptop, which they used to aid their research, to construct their invention through Minecraft, and, finally, to present their findings. The laptops were owned by the school and issued to the girls, but the girls had to negotiate the sharing of this device with their partners. The following sections detail the information garnered from teacher and learner feedback.

4.3.3. Interviews with teachers

In my interviews, I asked teachers to elaborate on their understanding of inclusion and IBL. In addition, there were questions about their experience of the benefits and challenges of IBL. We discussed their observations of the learners' experience of this form of learning and its ability or inability to encourage everyone's participation. The teachers discussed how their lessons were structured, and they reflected on the implementation and effectiveness of the specific lesson that I observed. Table 4.4. that follows summarised what was discussed in the interviews. This included a combination of direct quotations and paraphrases of the participants' views from the interviews. I will present a further analysis and discussion of these ideas presented in the table in Chapter 5.

Teacher Gamma	Teacher Chi	Teachers Mu, Alpha and Zeta
Evidence that the aim of a lesson was achieved		
Assessed according to final presentation/product; learners were able to show case their knowledge; and. observed oral interactions during class.		Learners were able to give direct answers to questions. Evaluation conducted by a prepared rubric. Quality of final product.
Teachers' experience of implementation and planning of IBL		
Felt that she lacked training and would appreciate more input in the planning of a unit of work. Positive about IBL, as she liked the concept. Difficulties in finding time to give feedback to learners.	Was introduced to IBL through a provocation. Initially found planning challenging and would have appreciated a template at the start. Found it challenging when there are lots of teachers involved, as finding the time to meet was difficult.	Teachers worked together as a team, but did not have set plans, because the team was constantly reassessing and adapting. IBL was a new approach, but the teachers were enjoying it, and they were surprised by the learners' creativity. IBL required teacher collaboration.
IBL and inclusion		
IBL was linked with inclusion, because everyone was different. During the year there should be something that interested everyone, which would increase motivation.	IBL leant itself to inclusion, because the learners were working with others. However, independent work in IBL was also possible.	IBL promoted inclusion, because it used different learning styles and the learner oversaw their own learning.
Modifications and planning of IBL		
IBL required teachers' teamwork, collaboration and lots of planning. Moderation and scaffolding were pre-planned, but you could not always anticipate all situations.	Any modifications needed to be planned, as well as included during the lesson as the need arose. This applied to additional support and extension opportunities.	The question was phrased as a problem, so it was very structured, and questions were imbedded in the problem. Modification and accommodations could be pre-planned as well as incidental (e.g. the checklist).
Teacher's role		
There needed to be buy-in from the teachers, so that they interacted with the learners.	A teacher must be committed to ensuring that the lesson reached everybody. Learners needed support and guidance through the process.	A teacher might need to sit with some of the learners and go through the task step-by-step. However, the teacher should also extend stronger learners. A teacher took on the role of a facilitator.

Comments on group work		
Concerned about girls being side lined in group work due to more dominant participants. Kagan's strategies (cooperative group work strategies) were helpful in regulating and managing group interactions. Group work should be monitored to avoid any issues.	Learners who struggled were often pushed along and boosted by their group. They were able to participate, they might learn more and be less anxious, because of the support and guidance of their peers. Group accountability encouraged more peer cooperation.	Academically strong learners, who struggled with group skills, underperformed during IBL. Group work skills would be required in the future, so the children needed to learn them in class. These skills were assessed during IBL interactions and through self-reflection. The same learners were identified who found interactions in groups challenging, irrespective of their group members. Learners were grouped intentionally.
Individual learner's characteristics		
"At some level every learner can get something out of it (IBL)". Learners who are struggling to learn might be less easily picked up, that is why IBL must be planned and structured. It was easy for some learners not to contribute and for dominant and knowledgeable learners to monopolise the conversation.	Children who were struggling academically - you couldn't start to think that they would be fine now, as this system might carry them along. You've got to identify and monitor them. Learners who didn't understand might be less easily picked up, because of the option to copy from others.	Some of the children who struggled in normal classroom settings do well during IBL. There was the hope that learners who tended to disengage took something away from this learning experience. Tried to encourage these learners during the lesson, but it didn't always help. It was easier to detect learners who were struggling, because you interacted individually with them using probing questions and could assess the final product.
Overall feedback from lesson		
The aim was not achieved in IBL, but it was achieved in other subject areas.	All the learners were actively engaged with the task and they coped well with it.	Overall, the teachers were happy about how the lesson was implemented.
Positive outcomes from the lesson		
Learners enjoyed the dressing up, the food and the dialogues were good. All learners participated in the conversation/dialogue. The scaffolding/structure provided with the task, helped with the learners' research skills. It was good to be together as a whole grade, and the learners were able to feed off each other.	The following reasons were given for the learners' engagement: They were able to help and support each other in their groups; scaffolding was helpful in keeping the learners focused and directed on the task; there were time limits given to the learners; the structured nature of the task; and, the learners' ability to choose their own topic. They showed far more interest in novel topics.	Learners had to apply information to solve real-world problems. The learning was purposeful. Learners were excited to have the freedom to create and explore. Some of the ideas that the learners produced were excellent. The learners were constantly learning, even if it was not the intended content or skills, they gained from the experience. Learners chose what interested them in the topic.

Negatives from the lesson		
Learners needed to address the question more, as lots of the work was shallow. They were limited by the topic they chose on their own. The results of self-reflection task indicated that the learners have not yet developed the skill to self-reflect sufficiently. Learners battled with higher-order questions.	iPads could be distracting at times, but strategies were put in place to monitor this situation.	The task was a bit advanced for them at this stage, and it was very work intensive. The learners were a bit vague at times, and they lacked critical thinking. Learners did not always conduct research appropriately.
Interesting results from the lesson		
The teachers introduced the question at the end of the lesson and this made a big difference to the focus of the learning. More time was given for the learners to prepare their results than originally stipulated. Learners' self-reflection indicated that they could have worked better in their groups.	Learners were asked to select what interested them and grouped accordingly.	The teachers introduced a checklist during the lesson to help direct learning and to keep the learners on task. The learners had access to the final rubric, which guided their learning. According to teachers' current perceptions, they work better in pairs at this age (Grade 4).
Feedback about specific learners		
Some of the learners did not put much effort into their final presentations. The learners who generally contributed minimally in class were the same during this task.	Chi was able to identify one of the learners in her class who struggled to remain focused.	Some of the learners seemed lost at the beginning.

Table 4.4. Summary of interviews with the teachers.

4.3.4. Learners' feedback.

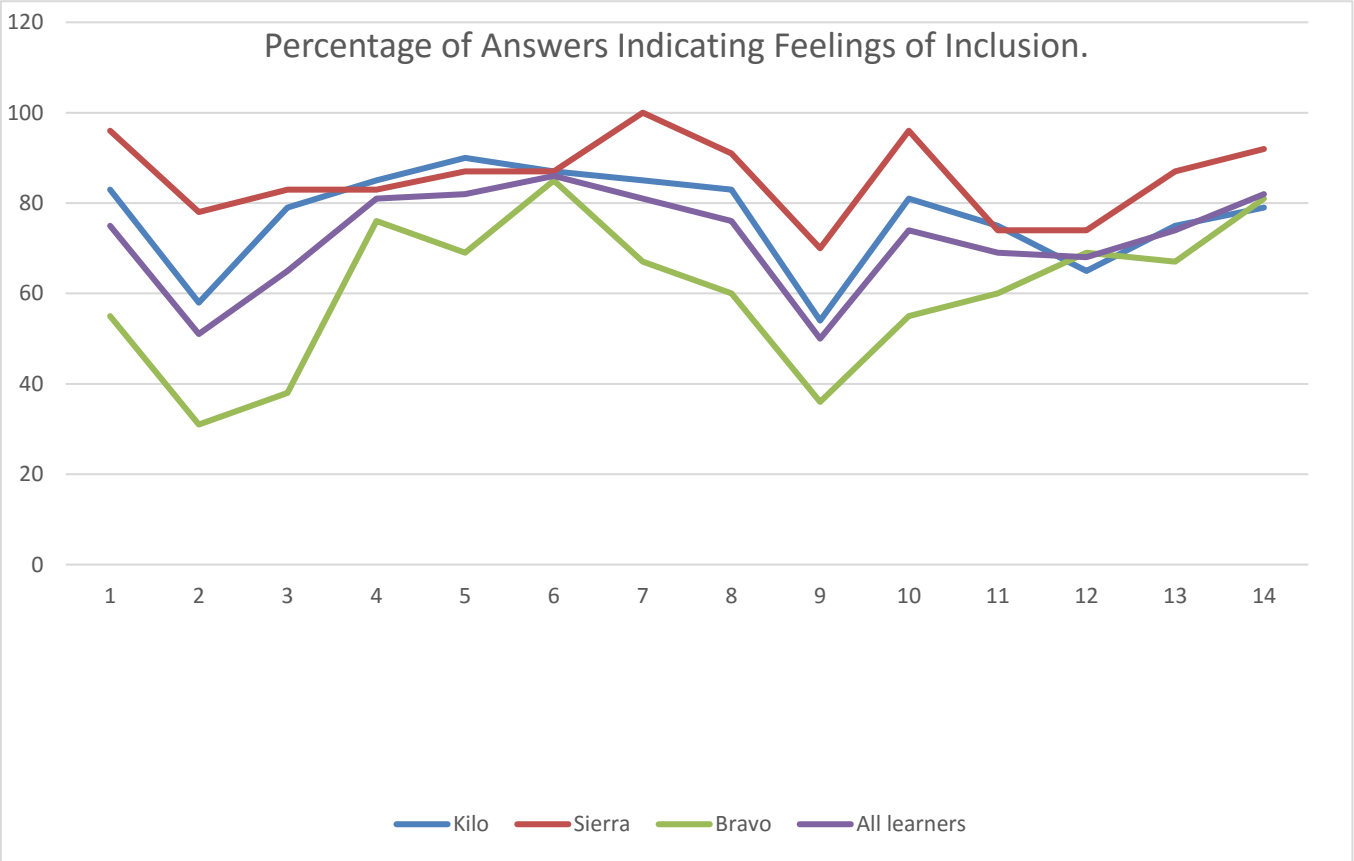
4.3.4.1. Self –reflection questionnaire (Front page)

The learners' feedback was garnered through a self- reflection questionnaire and interviews. In the three schools, I administered the self-reflection questionnaire to the whole grade or class near the end of the process. The questionnaire was completed before the learners presented their work to the class/group. I timed this specifically, as I wanted their reflections on the process of working on the task, not the final product. The table that follows illustrated the frequency of answers that indicated inclusive feelings from the learners. I converted each to a percentage in order to facilitate comparison. In the final column, I added all the learners together and found a percentage based on the whole sample size, namely 117 learners.

Responses from Self- Reflection Questionnaire						
	Questions as reflected on self-reflection questionnaire. Options given were the following: yes, no, maybe and I don't know	Frequency of answers that indicate inclusion	Kilo	Sierra	Bravo	All learners in sample
1	I enjoyed working in my group on this task.	% of yes answers	83%	96%	55%	75%
2	Everyone worked together well.	% of yes answers	58%	78%	31%	51%
3	The work was shared fairly.	% of yes answers	79%	83%	38%	65%
4	I felt that I was able to do the work	% of yes answers	85%	83%	76%	81%
5	I felt that the work was too difficult.	% of no answers	90%	87%	69%	82%
6	If I needed help, I knew where to go.	% of yes answers	87%	87%	85%	86%
7	I felt lost and didn't know what to do.	% of no answers	85%	100%	67%	81%
8	I felt like I was welcome in my group.	% of yes answers	83%	91%	60%	76%
9	I felt like I was an important member of the class.	% of yes answers	54%	70%	36%	50%
10	Other learners were kind to me.	% of yes answers	81%	96%	55%	74%
11	Other learners were helpful to me.	% of yes answers	75%	74%	60%	69%
12	I was busy with the task/project all the time.	% of yes answers	65%	74%	69%	68%
13	I felt like I knew what I was doing.	% of yes answers	75%	87%	67%	74%
14	I enjoyed learning.	% of yes answers	79%	92%	81%	82%
Mean of responses			77%	86%	61%	72%

Table 4.5. Learners' responses from the self-reflection questionnaire.

Line graph 4.1 illustrated Table 4.5 by displaying diagrammatically the average for each of the questions in relation to each school. Using both sources, some initial observations were that: Most of the averages were above 70%; and, some were within the 80 and 90 percentiles. These results indicated that most of the girls in this study expressed feelings of inclusion during their learning. It was significant that the learners at Bravo School showed some of the lowest percentages in the results, and the lowest one was 31% for question two. This was clearly shown in the line graph, where the Bravo School's line was below the other schools and the average line. These findings and their implications will be discussed in greater detail in Chapter 5.



Graph 4.1. Percentage of answers from learners indicating feelings of inclusion. The above graph is diagrammatic representation of the responses from Table 4.4. It illustrates the feelings of inclusion from the learners at the different schools. The higher the line the more feelings of belonging and inclusion were expressed.

4.3.4.3. Blob Tree feedback (Questionnaire- back page)

The question that related to the Blob Tree asked the learners to identify, for whatever reason, the blob that best described their experiences. Many learners identified various blobs, as an indication that they experienced multiple emotions throughout the learning process. Bar graph 4.2. that follows displayed the frequency of their responses. These were depicted as a frequency not a percentage, because some of the girls chose many blobs in their responses. The varying sample sizes at the different schools also needed to be considered when analysing this data

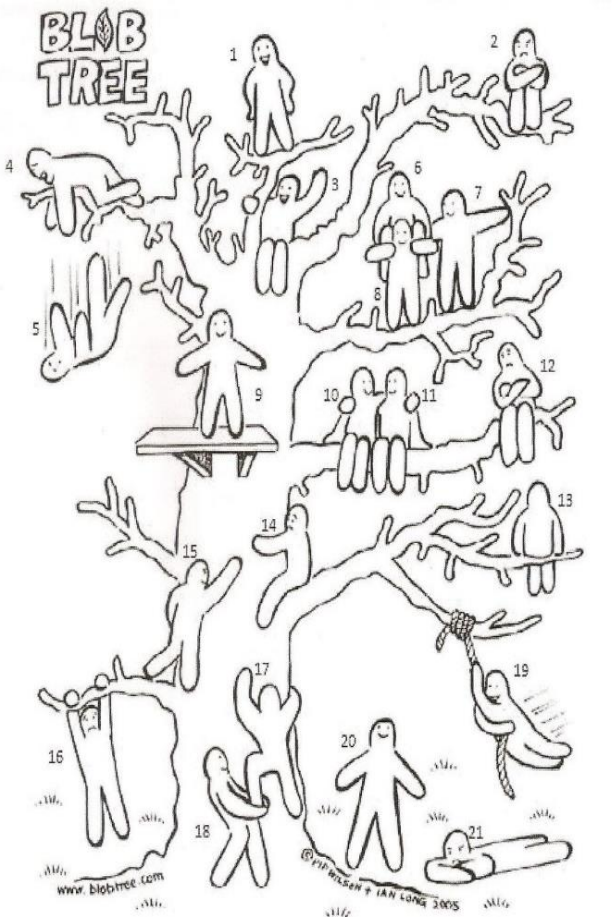
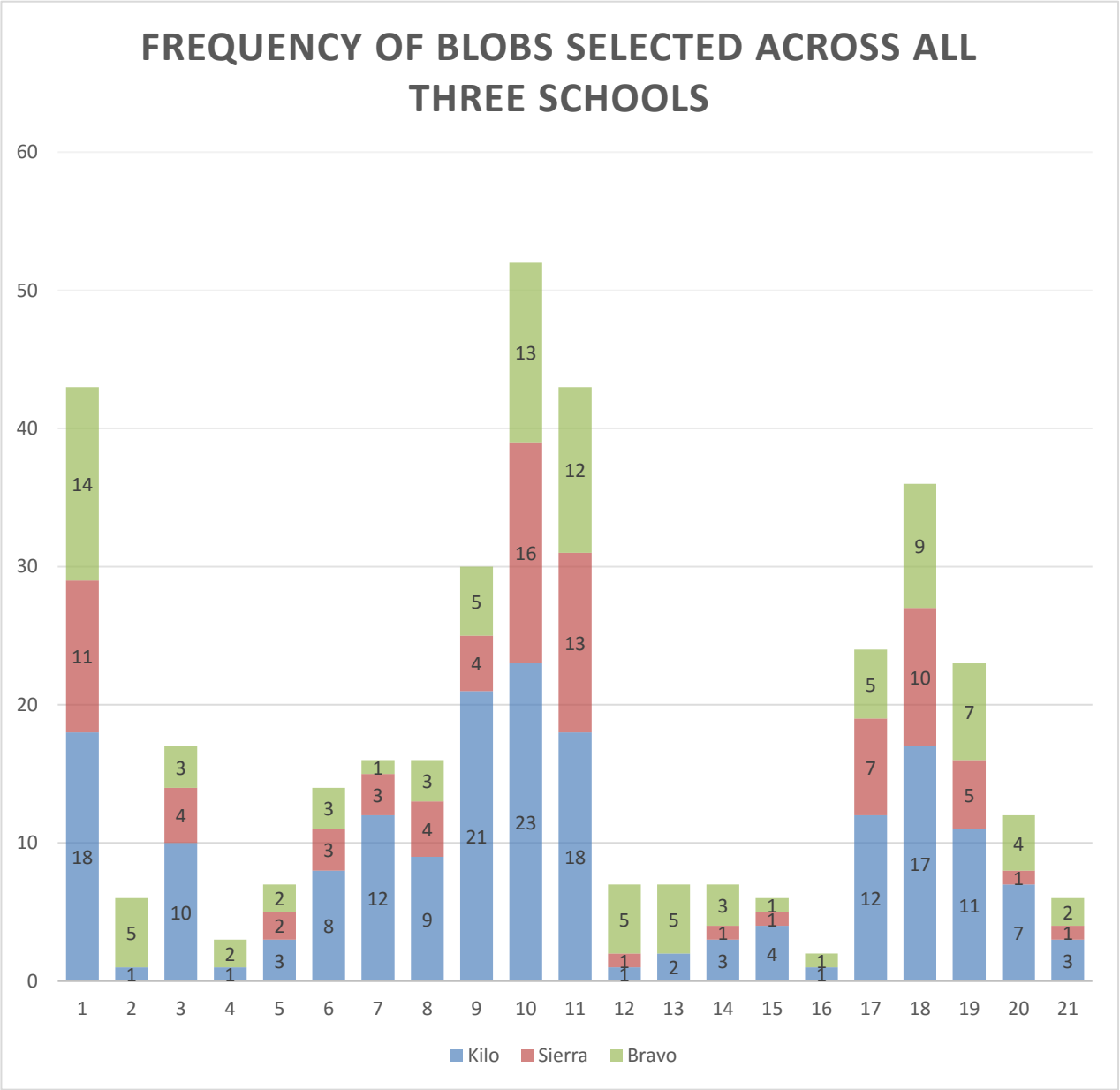


Figure 4. 1 Blob Tree



Graph 4.2. Frequency of blobs selected across all three schools.

Table 4.6. highlighted some of the themes and common answers given by the learners when asked for their reasons in selecting their blob/blobs. Graph 4.2. was read and combined with the themes found in Table 4.6, and some initial observations were that the frequency of positive responses was greater than those of negative responses. According to the learners' responses to the Blob Tree, most of the learners experienced the IBL lesson as positive and worthwhile, which enhanced feelings of inclusion.

Common themes Assigned to the Blob Tree by the Learners			
1	Happy, enjoyed the task, fun, on top of it, confident.	12	Mad, lonely, jealous, left out.
2	Left out, feeling mad/annoyed, difficulties with partner.	13	Mean, bossy partner, lonely, partner took over and didn't listen.
3	Happy, friendly.	14	Scared, worried, lonely.
4	Tried to help.	15	Helping others.
5	Conflicting responses of either happy or lost.	16	No comments provided.
6	Working well as a team and helpful to each other.	17	Others helped me and each other.
7		18	I helped others and each other.
8		19	Enjoyed, having fun.
9	Positive, ready, halfway, doing well.	20	Interesting, fun, At the beginning – excited/ curious, part of a group.
10	Worked well together, helped each other, and enjoyed working in a group.		
11		21	Not included, lonely.

Table 4.6. Common themes assigned to the Blob Tree by the learners.

4.3.4.2. Learners' interviews

Through the learners' interviews, the reasons for the different answers on the questionnaire were unpacked. The learners were selected based on their responses to the questionnaire and I mainly interviewed the girls who indicated some negative experiences about the process, when their answers were "maybe, I don't know, and no" (except for questions five and seven where a 'yes' answer indicated a negative response). I conducted the interviews by taking individual learners out of a session to a separate venue, while the rest of the grade/class was presenting or busy finishing off their tasks. Before I started to record the interview, I asked each learner if they were comfortable about being recorded and gave their permission for me to do so. This was in order to double check that they were still happy to be recorded after having already referred to their permission letters. Some learners chose not to be recorded, I then made notes while they spoke, and this information was included with all the other data collected. Table 4.7. that follows showed the number of learners selected and interviewed in each school.

Learner Interviews					
School	Questionnaires Completed	Selected for an interview from questionnaire	Declined to be interviewed	Non-recorded interviews	Recorded Interviews
Kilo	52	40	7	3	30
Sierra	23	16	4	1	11
Bravo	42	37	10	5	22

Table 4.7. Number of learners who were interviewed.

Although the learners' responses to the questionnaires were generally positive and showed an overall inclusive trend, I asked questions in the interviews in order to establish the reasons behind any exclusive practices or feelings. The interviews, with the individual learners, were short and I asked them for explanations of their experiences that were reflected in the questionnaire. There were various common themes that emerged from these conversations: problems with peer interaction and group dynamics; specific learner's characteristics, such as shyness and distractibility; differing opinions and challenges with the content; reflections on the support provided by their peers and teachers; and, finally the use of technology. It was some of these interactions and factors that contributed towards feelings of exclusion and limited participation. Table 4.8. provided a summary of the percentage of the learners' complaints during their respective interviews. The biggest limiting factor, according to the learners across the three schools, was problems with peer interaction and group dynamics. Each of these themes will be discussed in greater detail in the next chapter.

Learners' Interviews: Factors that Limited Participation					
School	Peer Interactions / Group Dynamics	Engagement with Content	Personality Characteristics	Technology	Reflections on Support
Kilo	40%	25%	23%	3%	9%
Sierra	35%	25%	20%	10%	10%
Bravo	42%	21%	8%	19%	10%
Total	40%	23%	17%	10%	10%

Table 4.8. Learners' interviews: Factors that limited participation.

4.3.4.4. Final comments from the self –reflection questionnaire

The final question on the questionnaire was a section that invited the learners to comment on the entire learning experience. It asked the learners to explain whether they had learnt any interesting information, and what their specific experiences were during the whole process. Although there were many comments that were based on the content, there were also comments that described their experiences and the skills that they had developed. While there were some negative reflections, for example Bravo Learner 3 stated, "M*y partner was bossy. She thinks she knows best",* most of these final comments were overwhelmingly positive. The learners stated that they had enjoyed the process, for the following reasons: they had fun, they enjoyed working in groups, they found the content interesting and relevant; and, they liked having a choice about what they had to learn.

4.4. Conclusion

This chapter presented data collected from the three schools that agreed to be part of the research sample. The data was collected through document analysis, classroom observations, learners' self-reflection questionnaire and participant interviews with both teachers and learners. In the following chapter, I elaborate on the results by discussing the findings based on this data. These results will be unpacked in order to answer the main research question, namely, to what extent did the use of an IBL pedagogy promote inclusive participation by all the learners?

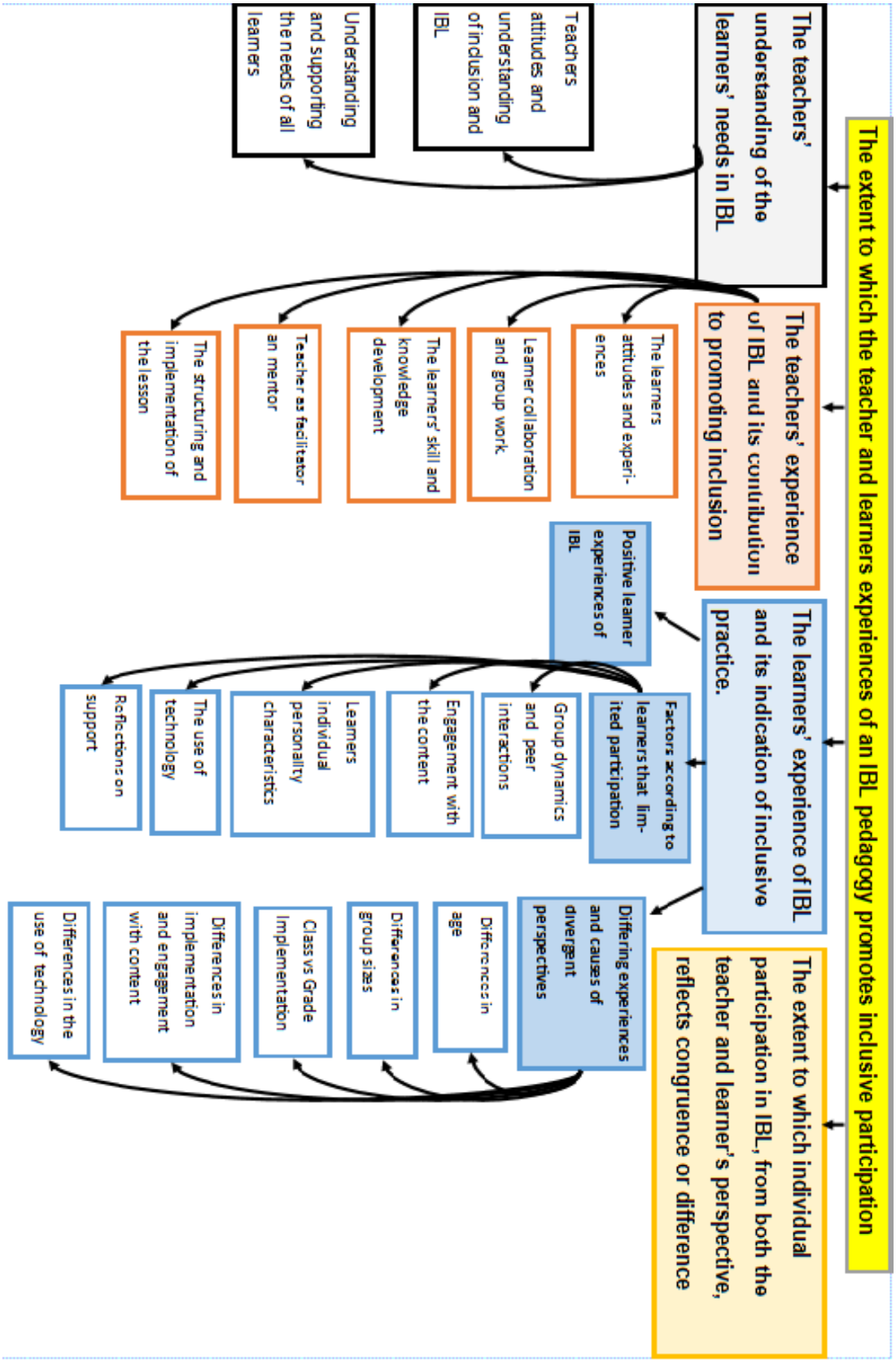


Figure 5.1. Conceptual map of findings.

CHAPTER 5: FINDINGS AND DISCUSSION

"If a child can't learn the way we teach, maybe we should teach the way they learn" (Ignacio Estrada).

5.1. Introduction

This chapter's structure is based on answering the four sub-research questions and the main question presented in Chapter 1. Each of these questions were rephrased as a statement, which I discussed in relation to relevant literature and data collected during the research process. First, I ascertained the teachers' understanding of the learners' needs. Secondly, I described the teachers' experience and their impact on promoting inclusion. Thirdly, I presented the learners' experience of IBL. Fourthly, I described any similarities and differences in these experiences. Finally, the main question was addressed, namely, to what extent the experiences of an IBL pedagogy promoted inclusive participation. Figure 5.1 served as a guide and summary for the discussion in this chapter.

5.2. The Teachers' Understandings of the Learners' Needs in IBL.

This section focusses on the first research sub-question concerning the teachers' understanding of the learners' needs and evidence of their ability to take these needs into consideration through IBL. The discussion is focused around firstly, the teachers' attitudes and understanding of IBL and inclusion. Secondly the teachers' perception of the needs of the learner and their views on supporting these needs through IBL is unpacked.

5.2.1. Teacher attitudes and understanding of inclusion and IBL

All the teachers were able to define both inclusion and IBL during their interviews. The idea of full participation for all learners, as described in Chapter 2, was in one way or another present, when the teachers described their understanding of inclusion. An example was when Teacher Mu said, "(inclusion is) *catering to all learning styles and being accommodating to learners,* (as well as) *to the heterogeneous group. The varied learners including their learning abilities* (and) *including even* (their) *social background.*" This definition showed that the teacher had a good understanding of what inclusion meant. Väyrynen (2015) described four teacher competencies for inclusion, which were mentioned in Chapter 2: they were appreciating diversity; supporting and raising expectations for learners; working collaboratively; and, being lifelong learners.

These competences were fulfilled by all the teachers in this study. The five teachers showed an appreciation for the value of student diversity and encouraged their learners to express this diversity during their presentations. For example, Teacher Chi asked a learner from a different part of Africa to share her experiences with the rest of the class. The teachers were able to support the learners in the IBL lesson in all three contexts, and they had high expectations, for the learners to achieve. The teachers also collaborated as a team when they worked on the IBL units. This was particularly true at Bravo School, where every facet of the programme was planned and executed as a team. The Bravo School teachers also reflected in their interview that they had parental involvement in that parents can be contacted in order to provide support at home as well as learners sharing their learning experiences with their parents. Collaborative teaching practices improve the quality of instruction provided and the learners' involvement. It allowed the teachers to meet the various needs of their learners (Chu, Tse & Chow, 2011). The teachers met the final criteria of being lifelong learners, as this was evident in their approach and attitude to learning and implementing IBL. This pedagogy was new to the teachers, yet they were willing to adapt, change and learn in order implement it.

The teachers' inclusive attitude should have a significant impact on the learners' experience of their own learning. The fact that the overall atmosphere of the schools embraced the learners' differences and they were all treated with dignity boded well for an inclusive experience in IBL.

There were certain characteristics that needed to be fulfilled for a lesson to qualify as IBL or PBL. These criteria were the following: IBL required the learners' active participation around a central question or problem; there needed to be encouragement of collaboration among the learners; and, teachers needed to facilitate and scaffold the process (Spronken-Smith et al., 2008; Hmelo-Silver et al., 2007; Guven & Duman, 2007). The teachers' understanding of IBL had a direct impact on their ability to implement this form of learning, as they could not implement a pedagogy that they themselves had not grasped. All the definitions provided by the interviewed teachers showed a general understanding of IBL. An example of one definition provided by Teacher Chi stated, "*There is a big question to be asked* (during the lesson)*; not just learning* (a topic) *in isolation;* (the learning is) *linked to a bigger idea"*. Teacher Mu echoed this sentiment by stating, "*It's*

learning through sort of questioning, an investigation". The lessons mostly fulfilled all the criteria needed to qualify them as IBL lessons: The learners were active; there was collaboration through group work; the teachers facilitated the lesson; and, they provided scaffolding to support the learning. However, the lesson at Kilo School lacked one aspect, the question and Teacher Gamma admitted that her IBL units became *"more of a big project"*. This problem was clearly seen during the lesson observation, as it became evident that the question was missing. While this question was present in the planning of the unit, it was not clearly stated during the lesson's implementation. The question would have focused the inquiry and fulfilled the criteria of being inquiry-based lesson. It is important to keep this idea in mind, as it changed the implementation of this lesson from an inquiry-based to a project-based one. This was an important consideration as this change in pedagogy affected its relevance to this study's research question. There was, however, valuable information to be garnered from this difference in implementation methods. This could affect the potential of this lesson to allow for the participation of all learners and thus its value as an inclusive pedagogy. The inclusive potential of this lesson will be explored in greater detail.

5.2.2. Understanding and supporting the needs of all the learners.

In interviews, there was a consensus among the teachers, that every learner would not be accommodated automatically through IBL. If necessary, all learners would require some form of monitoring and intervention. Teacher Chi stated, "*Children who are struggling academically, you can't start to thinking that they will be fine now, this system will carry them along. You've got to have identified them and monitor them"*. The hope was expressed by Teacher Alpha, that even learners who tended to disengage in class, would gain some benefit from their experiences in the lesson. Overall, it was felt by the teachers that support and interventions needed to be pre-planned as well as applied incidentally as the need arose. Teacher Gamma stated that this approach was needed as*, "you don't anticipate* (situations)*".* Yet, IBL could be more effective than other approaches as long as the learners were supported sufficiently. The effectiveness depended on the guidance received during an inquiry (Lazonder & Harmsen, 2016). I will discuss some of these specific interventions and support in detail while answering the second research question.

The teachers interviewed for this study were able to describe the learners' needs and to suggest actions required to accommodate them. An example was given when Teacher Mu

spoke of her learners being "*overwhelmed"* and it being *"work intensive"*, however she also suggested that, "*It ran for too long or if we needed more break outs"*. Teacher Gamma reflected, *"They haven't got the depth of reflection yet".* She indicated that this was an area that required further development in order to be utilised effectively. I observed teacher understanding of learners' needs through the interactions between the learners and teachers in class, where the teachers provided additional explanations and extra support whenever required. The teachers' attitudes, understanding and expectations regarding inclusion and IBL had a positive impact on the learners, because the teachers looked for opportunities to support the learners. Teacher Chi commented, *"Children who need extension, it could quite easily come up through their* (IBL)*"*. In addition, Teacher Alpha stated, *"We are enjoying it and they amaze us with their creativity".* The following section delves more deeply into the teachers' individual experiences of IBL.

5.3. The Teachers' Experience of IBL and its Contribution to Promoting Inclusion

This section focuses on the second research sub-question concerning the teachers' experience of IBL. It meant a discussion was necessary on the various themes that emerged from the research, which reflected teachers' perspectives and experiences. These general themes based on the teachers' experience could have either contributed to inclusion or they might have provided obstacles to inclusive practice. There were various factors, such as learners' enjoyment and collaboration, and their development of skills, which were mentioned in the teachers' interviews. All these examples provided evidence that IBL was a pedagogy that could nurture and promote inclusion and thus provide the opportunity for all learners to be actively involved in the learning. However, the teachers were able to describe some of the challenges too. The challenges highlighted by the teachers could have an impact on whether IBL would be considered inclusive, because it posed barriers to the participation of some of the learners. Both the positive factors and challenges will be unpacked further.

5.3.1. Learners' attitudes and experiences

Teachers highlighted that the learners seemed to enjoy and be interested when IBL was used. Teacher Chi stated, "*The kids were really engaged"* and Teacher Zeta shared that, *"They really enjoy it, because ... they take charge of their learning"*. The learners seemed to find purpose in their learning, and they were inquisitive and enthusiastic. They were

motivated, actively involved and liked to have some choice in aspects of the task. Teacher Alpha stated, "*The excitement of having this freedom to create and explore. They've almost chosen what interests them in the topic".* This allowed for the learners to be independent and to take responsibility for their own learning. As a researcher during the classroom observations, I noted this engagement and interest in the task too. According to Englebrecht and Green (2018), an inclusive pedagogy was one that allowed the learners to make choices, where they were free to select a topic that they found most interesting, and to form groups based on this choice. Chu, Tse and Chow (2011) stated that the provision of choice allowed learners to take responsibility for their own learning. During the lesson at Sierra School, this aspect of an inclusive pedagogy was particularly evident. The learners were able to choose their own topic, which facilitated the formation of their groups. This meant that the broadness and less restrictive nature of IBL ensured that the learners could find something that interested them, and it accommodated different ways of learning. All learners were able to participate in the lesson, although some were more involved than others. Teacher Alpha observed that, "*Even if it's not related to my topic, they hopefully have taken something away. It might not be the learning we intended from it … So, they are learning and* (an) *inquiry is still happening".*

There was some disagreement between the teachers about how easy it was to identify learners who found the work challenging. The teachers from Bravo School indicated that the learners' ability to interact individually allowed them to make this identification. However, Teachers Chi and Gamma indicated that given the nature of group work, it might be less easy to identify learners who were struggling, as these learners could copy from their peers or more assertive learners would monopolise the conversation. Even though the teachers' perspectives were different, they both indicated a trend towards inclusion. The learners who were struggling were supported in both cases, either through interactions with their teachers or with the members of their group.

5.3.2. Collaboration and group work

The ability to engage in group work and to collaborate with their peers was seen as a positive by all the teachers. Another criterion for an inclusive pedagogy was the ability to learn collaboratively with and from their peers (Englebrecht & Green, 2018). According to the Bravo School teachers, this collaboration allowed for improved communication skills and mutual support. It also meant that the group provided assistance

for one another when the tasks were challenging. Teacher Chi said, *"*(The learners) *weren't alone and floundering. They had the others to guide them and nudge them along"*. She also mentioned that learners' anxiety was less because they had they support of their peers. Teacher Gamma noticed that learners were able to *"feed off each other"* during their interactions. This is reiterated in the literature where Slavin (1996) stated that group members could provide support, information and motivation in order to solve a problem or answer a question. They are able to bounce their ideas off of each other. Group interactions provided learners the opportunity to discuss, to debate and to gain multiple perspectives. All the teachers made use of heterogeneous grouping strategies, where the groups consisted of learners of different abilities. These groupings were done intentionally in order to encourage interaction, support and inclusion. Teacher Chi also mentioned accountability by individual members in a group, as an important way to encourage all learners to participate in the learning process. Learners were accountable when they gave feedback, and when they provided and received help from individuals as well as their groups (Forslund Frykedal & Hammer Chiriac, 2018). This form of accountability was observed during the classroom interactions, and it was reflected in the teachers' interviews and evident in the learners' presentations in the three contexts, particularly at Sierra School.

The teachers highlighted the positive aspects of collaboration regarding inclusion, however, they also listed these interactions as potential barriers to inclusion. The teachers were aware that some of the learners could be excluded and side lined from group discussions. Those learners that lacked the necessary collaboration skills were particularly vulnerable during activities. This concern was echoed in the literature where Forslund Frykedal and Hammer Chiriac, (2018) listed skills that were required to promote effective group work, such as conflict management, encouraging and affirming others and the search for a common goal. The teachers at Bravo School were able to identify specific learners who found the group interactions a challenge. All the teachers stated that there needed to be alternative strategies to guide and manage collaboration in order to facilitate productive group work. Teachers were aware that group work might not always succeed, therefore they should strive to set up the correct conditions for effective collaboration. One of these conditions includes a sensitivity to the fact group work skill development may be immature in younger learners and therefore less effective due to age differences

(Leman, 2015). Teachers at Bravo School were aware that they needed to be sensitive and make accommodations in order to facilitate working with younger learners in Grade 4. This was the reason given as to why they chose pair work for their learners instead of placing them a larger group. However, in Leman's (2015) study it was thought to be more beneficial that the younger children were placed in larger groups, not smaller ones. It was understood that in the Leman study, that larger groups were more age appropriate and productive. The optimal size of the group could potentially have an impact on the ability to collaborate. Effective group work also required the setting up of well-structured group work, where specific collaborative strategies were given to the group (Forslund Frykedal & Hammer Chiriac, 2018). Lang, Costley and Han (2016) highlighted that group work was more effective when the tasks were structured and scaffolded. The teacher-led structuring of groups was observed in all three contexts to a greater or lesser degree. The teachers at the schools also utilised incidental conflict management when necessary. In addition, at Kilo School, Teacher Gamma used cooperative group work strategies and at Sierra School the groups were given clear expectations on how they were expected to interact.

5.3.3. Skills and knowledge development

The teachers stated that they observed the development of the learners' skills during the IBL lessons. They found this encouraging, as they noted via their own observations that the learners were able to attach more meaning to their learning. In addition, the teachers observed that the learners developed better analytical and critical engagement with resources. The skills required for answering questions improved. For example, Teacher Chi stated, "*They* (the learners) *actually did better at answering the big question"*. Teacher Zeta added, "(The learners) *are still developing*, (so) *they have to use higher-order thinking … That is what we are pushing them towards"*. The teachers gave another advantage of IBL for the learners: It provided the opportunity and scope for including and exploring their creativity, as shown by Teacher Gamma who stated, "*It gives them* (the learners) *a chance to make things and create things"*. The teachers from Bravo School stated that they were pleased with the quality of work that the learners' produced. Research by Chu, Tse and Chow (2011) also demonstrated the following about IBL: It encouraged deep thinking; it developed the ability to apply knowledge and reasoning skills; and, it helped with problem-solving and decision-making skills.

However, there was some contradiction shown in the interviews. Some of the teachers were encouraged by the learners' development of deeper thinking skills, while others indicated that the learners were unable to display the required depth of knowledge. In addition, they lacked the prerequisite critical thinking skills needed to engage fully with the content. As a result, some of the learners showed a decreased involvement in their tasks. The lack of depth of knowledge was a particular concern to Teacher Gamma, as she stated, "*They battled with the higher-order questions*". This observation was made about a lesson that lacked a question to focus its inquiry. This question could have given direction to the inquiry, which may have promoted a more in-depth understanding of the content and thus learners' answers to questions may have been less superficial

The teachers maintained that some of the learners' inability to work effectively with resources contributed to them being excluded from the learning process. In the three lessons I observed, there was a reliance on resources found on the Internet or provided by the teacher. The expectation was that learners needed to decipher and extrapolate relevant information from Internet sources. They then had to select what was required in order to answer the questions/problems posed and complete the task. The learners' immaturity in research skills could thus have had a negative impact on the process. Teacher Zeta observed that some of the struggling learners *"sometimes get lost"* as to what was required, as they found the volume of information overwhelming. The use of scaffolding, in the form of checklists and rubrics helped to develop these research skills, but these tools sometimes added to the confusion.

5.3.4. Teacher as facilitator and mentor

The role of the teachers in these IBL lessons was vital, as they were able to contribute towards the inclusion of the learners or conversely their exclusion. Makoelle (2012) stated that when a teacher worked alongside their students, then a teacher provided support for them while they solved problems and discovered knowledge. These actions showed the potential to include all the learners. I observed this supportive role during the classroom observations. Teacher Gamma stated the following regarding teacher interaction in the class, *"*(You require) *buy-in from your team …* (you need to be) *on the same page, it's a team effort".* Although the teachers saw their role in IBL as a facilitator rather than imparting information, there was still a large amount of guidance given by the teachers

during the three lessons. Some more traditional teaching methods, like direct instruction, were used as an introduction to the lesson.

The teachers highlighted the importance of providing support and guidance as well as working individually with their learners in order to cater for their needs. Teacher Chi, reflected on the scaffolding she provided, stated, *"I think if I hadn't given them those questions, they could have floundered and gone off completely"*. In addition, Teacher Zeta explained, "*You have to kind of sit with them and go through it step-by-step. You are clarifying things for them as they go".* This inclusive practice allowed for all the learners to participate in the learning. Lazonder and Harmsen (2016) reported that learners perform better in an inquiry that is structured and guided over one that it unstructured. This is particularly true of younger learners. This was observed to some degree at Kilo School, where an intern teacher, a university student studying to be a teacher, was with a class for the lesson. She was less involved in the lesson, with the result that, the learners were less focused, and goal directed. This showed that if teachers did not provide support or they relied on more unstructured methods, then it had the potential to lead to some learners being excluded.

5.3.5. Structuring and implementation of the lesson

The teachers agreed that for IBL to be successful it needed to be a well-planned unit with structured lessons. Reid, Zhang and Chen (2003) made a distinction between three types of support: First, is support that helps the learners understand the content while completing the task, which they called interpretive. Secondly, experimentation support is that which scaffolds, guides and helps the learners through the learning process. Finally support that helped learners reflect on the skills and knowledge gained during their learning experience. It was clear, during the class observations, that the teachers were able to employ all levels of support. Some of the interventions and scaffolding suggested and used by the teachers included the following: sitting with individual learners; structuring the unit of learning with embedded questions; limiting time; the provision of key words or headings; and, the use of learner self-reflections, checklists and assessment rubrics. As an inclusive pedagogy, scaffolding was recommended in order to pre-empt any difficulties and to help the learners overcome these potential difficulties. Once the aim of supporting learners in order to minimise difficulties was achieved, then the scaffolding could be reduced (Englebrecht & Green, 2018). It was clear during the

observations and the interviews that scaffolding formed an integral part of the implementation of IBL at the three schools.

To conclude the discussion of the teachers' experiences, the teachers' practices contributed a great deal to the understanding and promotion of IBL as an inclusive practice. The teachers were able to describe the positive outcomes of using this pedagogy and they were aware of areas that needed further development. They were also proactive in ensuring that these issues were addressed and monitored. This was expanded upon in the sections on: collaboration and group work; skills and knowledge development; the teacher as a facilitator; and, the structuring and implementation of the IBL lesson. All these ideas contributed towards the teachers' perceptions that this form of learning was positive for the learners. Teacher Mu stated, *"This* (IBL) *is the way forward"* and Teacher Gamma concluded, "*I think the majority of girls enjoy IBL."* In the next section, I discuss IBL from the learners' perspectives.

5.4. The Learners' Experience of IBL and Indication of Inclusive Practice

This section addresses the third research sub-question and delves into the learners' experiences of IBL. It uses the information garnered through classroom observations, interviews and questionnaires to unpack the various trends and themes evident in the learners' reflections. The discussion centres around firstly, the positive reflections from learners about the learning and factors according to them that contributed towards their ability to participate fully in the learning. Secondly the discussion unpacks the various limiting factors that could form barriers to their learning and their ability to participate. Finally, there is a discussion around the differing perspectives and experiences seen across all three schools and the possible causes for these differences.

5.4.1. Positive learner experiences of IBL

Upon analysis of the information from the first page of the student questionnaire, there seemed to be a high percentage (72%) of learners who felt included and able to participate in this form of learning. Another statement on the questionnaire, "I enjoyed my learning", indicated as 82% positive overall across the three schools. This high percentage showed that the learners were happy and positive about IBL as a pedagogy. The learners expressed how much they enjoyed the lesson in the final comments on the questionnaires. Examples

of some of the comments written by learners follow: Bravo Learner 1 said, "*Team work makes dream work, you can't do everything alone*"; Sierra Learner 1 said, "*I got to learn about the real world not just some perfect fake one*"; Sierra Learner 2 said, "*My brain is filled with knowledge*"; Kilo Learner 1 said, "*I enjoyed being in a group, where they helped me understand when I didn't*"; and Kilo Learner 2 said, "*It was very fun, exciting and interesting*". When observing the learners during class time, the overall atmosphere was productive and most of the learners were actively engaged with the task. They displayed a keen motivation to learn and the majority were on task and participating actively.

When analysing the Blob Tree, this positivity was evident, because 52 learners chose blob ten that indicated they enjoyed working together with their peers. Some indicated that this was the best aspect of the lesson. Kilo Learner 3 said, "*We all worked well together, everybody had their own opinion and we did well*". Next, 43 learners selected blob one, which indicated feelings of happiness and confidence. Bravo Learner 2 said, "*When I did something, I felt good about it."* The blobs that depicted negative learning experiences (2, 12, 13 and 14) were the ones that were least selected with an average of six to seven votes each. However, these negative responses account for a relatively small percentage, namely six per cent (21 of 371 blobs) of the overall sample. I explain the reasons behind some of these negative experiences in the next section.

5.4.2. Factors according to learners that limited participation.

5.4.2.1. Group dynamics and peer interactions

When I analysed the questionnaire, the areas with the lowest ratings were statements that related to the following: unfair division of work in group (65%); working well together (51%); and, feelings of importance within the class (50%). According to the learners, it seems that the biggest contributor to feelings of exclusion was their interactions with their peers. This was once again reiterated in the different learner interviews. However, the statement related to a lack of feeling important was further qualified during the learners' interviews. In general, the learners stated that they did not feel the most or the least important, instead they felt that they were equally important to everyone else. Examples were from Kilo Learner 8 who stated, *"I didn't think I was more important than anyone else"* and Bravo Learner 6 explained, *"I feel everyone's important in the class"*. This

indicated that feelings of less importance, were not evident or factor in limiting their participation.

Group dynamics and peer interactions presented itself in the interviews, as the most overwhelming and prevalent factor to limit inclusion. The most complaints (40%) related to learners' interactions with their peers, where there were: specific incidents of arguing or disagreements; examples of a lack of listening to one another; times when learners talked over each other; and, examples of unequal distribution of workload and resources. In addition, the learners indicated that that some group members tended to take over or there were others who did very little or there were also those who isolated themselves from the group, because they did not feel welcome. A few examples from the learners highlighted these negative interactions: Sierra Learner 3 stated, *"Some of the people do a lot more work than the others and other people just slack off"*; and, Bravo Learner 7 complained, *"We didn't really get along very nicely"*. This was a trend observed by Leman (2015), where if one child is perceived as more knowledgeable than the others, then this child might have a negative impact on collaboration, as the others would fail to engage with the collaborative process. There were also those learners who were nervous about expressing their opinions, because they feared being judged by their peers. This was shown by Kilo Learner 9 who confessed, "*I feel that I can't say my opinions because I might get judged by it".* Some of the learners expressed feelings of frustration and loneliness regarding unkind treatment by their peers. This was particularly evident in the younger age group at Bravo School, as Bravo Learner 8 commented on her partner, "*She was shouting at me. It made me feel very sad".* Leman (2015) stated that there were cognitive and social benefits to collaboration, even when this involved conflict and disagreement. However, he added that there were times when conflict in group work could prohibit productive discussion. This was particularly true when the learners lacked the social skills to interact successfully.

Some of the learners' negativity around peer interactions appeared to contradict earlier statements made by them concerning their enjoyment of IBL. This apparent contradiction highlighted the importance of the group interaction to influence the learning and the inclusive potential of IBL either positively or negatively. It is the learners' ability to feel safe with their peers in a cooperative process that had the most impact on IBL as an

inclusive pedagogy. They need to feel accepted and recognised by their group in order to fully participate (Forslund Frykedal & Hammer Chiriac, 2018).

5.4.2.2. Engagement with the content

The interviews revealed other themes that impacted on the learners' ability to participate. This was evident in the second most prevalent theme, which related to the challenges the learners experienced with the content, as 23 per cent of the concerns raised were based on struggles with the task itself. There were some girls who stated that they found the content challenging, especially at the beginning of the task. Sometimes the instructions were confusing, or expectations were unclear, and they were unsure of whether their approach was correct or not. Bravo Learner 9 stated, "*Like I really didn't understand somethings"*. The learners indicated that the task required a large amount of mental energy. Another challenge the learners highlighted was the difficulties they experienced with the research process. Some girls found the sheer volume of Internet information was overwhelming, therefore they found it challenging to locate the information required for their task. Kilo Learner 5 said, "*There was so much information, it was hard to find*"; Sierra Learner 4 stated, "*It was quite difficult to find answers and everything"*. However, the learners indicated that the majority of these challenges dissipated once they were working with the given resources and were able to learn from their peers within their group. Sierra Learner 5 stated, "*I didn't really know what I was doing, but then ended up knowing what I was doing towards the end"*. In two of the schools, Kilo School and Bravo School, there were some negative reflections on the length of the task, as the learners stated that it could have been shorter. Kilo Learner 10 commented, "*The IBL lessons are nice but they are quite long"*.

5.4.2.3. Learners' individual personality characteristics

A third theme that emerged from an analysis of the data was how individual characteristics impacted on participation. This accounted for 17 per cent of the negative reflections during the learners' interviews. One of the main individual barriers identified by the learners was shy personalities, as the latter led to an inability to ask for help or a lack of assertiveness in a group setting. Another issue was that of distractibility, because 87 per cent spoke of when their team members tended to get involved in unrelated conversations to the task or they got distracted by their devices. Bravo Learner 10 confessed, *"We were just fooling around, while the other one was working"*; and, Sierra

Learner 6 explained, "*You would look at a photo and get quite carried away".* This concern was echoed by Haßler, Major and Hennessy (2016) who stated that entertaining features on a device could prove to be a distraction during learning, which could lead to reduced outcomes. However, some of the learners reflected that their distractibility was less in a group situation using IBL than it was in a traditional classroom setting.

5.4.2.4. Use of technology

A fourth theme that emerged was the use of technology, which accounted for 10 per cent of the negative reflections in the interviews. Challenges with finding information on the Internet was grouped with the theme about engaging with the content discussed previously. This theme related to the challenges experienced by learners when technology and devices either failed them in some way or had to be shared. The use of technology caused frustration, when the learners' devices did not connect to the Internet or when they lost parts of work on their devices. Bravo Learner 3 stated, "*The laptop had difficulties and started deleting everything".* At Bravo School, conflict arose between some of the learners who shared a device with their partners, because this often led to unequal workloads within the group. The result was that one of the partners was forced to observe and felt excluded. Although some of the learners found using technology a challenge and I detected some charging of devices issues at Bravo School, I observed that the majority of the learners worked well with their devices, and the benefits of using this technology to support their inquiry was evident during the classroom observations. Haßler, Major and Hennessy (2016) enumerated the benefits of using technology as follows: it allowed for greater depth in an inquiry; it encouraged real-world situations; it increased motivation; and, due to its inclusive potential, devices increased the ability to support learners in the IBL setting. However, Haßler, Major and Hennessy (2016) also stated that the instructional approach was more valuable than the technology, therefore the teacher must monitor the effective use of the learners' devices through the lens of IBL and inclusion.

5.4.2.5. Reflections on support.

Finally, the last theme was the learners' reflections on the support provided by both their teachers and their peers, and this accounted for 10 per cent of the negative reflections in the interviews. Lazonder and Harmsen (2016) stated that the level of guidance and support provided in the classroom, have a substantial, positive effect on inquiry learning,

performance achievement and the learning outcomes. Guidance had a larger impact on inquiry skills than on gaining knowledge, and the learners performed better when they were given this support. Reflections by learners on the guidance received was mostly positive, however, some of the individual comments showed that the learners sensed a teacher's frustration or that a teacher who was less involved gave less support. Kilo Learner 7 stated, *"The teacher that was filling in for her isn't as supportive as she was"*. In addition, where many teachers were available, this caused the learners to feel uncertain about where to get information and who to consult. The issue of support also related to their peers who were not always helpful. Sometimes the learners' peers would ignore requests for assistance, show their frustration when asked for help, or be so focused on their own work that they were unwilling to help others. This once again highlighted the importance of peer relationships and interactions in the IBL context.

5.4.3. Differing experiences and causes of divergent perspectives

In the questionnaire, there was evidence of different perspectives according to the three schools. These perceptions related directly to feelings of inclusion by the learners. Sierra's learners indicated that they felt the most included (86%), Kilo second (77%) and the learners at Bravo School highlighted feelings that indicated the least inclusion (61%). Differences in approach, dynamics and implementation of the lessons could account for these differing viewpoints. I have identified specific differences and will explain each one of them in the next section. By understanding these differences, it would help to identify the strategies that might lead to a more inclusive pedagogy.

5.4.3.1. Differences in age

The first difference relates to age. The sample consisted of two Grade 6 classes and one Grade 4 group. The Grade 4 group were the learners at Bravo School, and they had the lowest inclusive score of 61 per cent, when compared to 77 per cent at Kilo School and 86 per cent at Sierra School. Learners at Bravo School had the most complaints about conflict and peer tension, with peer interactions making up 42 per cent of the negative views expressed in their interviews. An example, Bravo Learner 4 said, "*We fighted [sic] a lot and I felt that I wasn't welcome*". Leman (2015) stated that age has an influence on collaboration and that younger children struggled to grasp that collaborating required working with differing perspectives. There was also less scope for resolution through compromise. Older learners would be more sensitive to social dynamics within a group.

Taking Leman's (2015) findings into account, this could provide a reason for some of the differences seen in the responses between the Bravo learners and the rest of the sample. Their lack of maturity could have had an impact on the development of their social skills and consequently their ability to interact within their groups. The learners' age also seemed to have impact on conflict resolution in that the older children were able to resolve conflict easier than the younger children, as well as their feelings of confidence when contributing to group ideas. Children, as they grow and develop, improve their abilities to conduct sound investigations and to transfer this knowledge and skills into novel situations. Research has also suggested that less experienced learners needed more explicit guidance (Lazonder & Harmsen, 2016).

5.4.3.2. Differences in group sizes

The group sizes were different at the three schools: Kilo School's groups were the largest with six participants, then Sierra School's learners were in groups of four and Bravo School's learners were arranged in pairs or triads. Sierra School's scores indicated that there was the least conflict and most social cohesion among their learners, as 78 per cent of them responded that they worked well together. While 58 per cent of Kilo School's learners and only 31 per cent of Bravo School's learners indicated that their groups worked well. Apugliese and Lewis (2017) asserted that groups of four or less, were most effective when communicating in groups but acknowledged that other factors in the learning context, such as the lay out of the learning space, could contribute to this cohesion. There might be no causal link between group size and social cohesion, however, it was interesting to note these different scores as the specific dynamics of members within the bigger group sizes at Kilo School may have negatively influenced their interactions. This however contradicts evidence from Bravo School, where they had the smallest groups and the least cohesion. If we looked at group size alone it would seem that groups of four (Sierra School) seemed to be optimal.

5.4.3.3. Class versus grade implementation

Differences in group size had the potential to affect the third difference, which was that two of the schools chose to implement IBL across a whole grade (Bravo School and Kilo School), while one school used a single class (Sierra). The question of the size of the whole learning group, as well as the different number of teachers in this environment, could have had an impact on the learners' feelings and experiences of IBL. The fact that

Sierra School's scores about social cohesion were the highest could have indicated that the class's size should be considered when setting up an IBL lesson.

5.4.3.4. Differences in implementation and engagement with content

The differences addressed related specifically to the characteristics of the lesson and the learners' engagement with the content. Statements on the questionnaire that related to these aspects were, "I felt like I knew what I was doing", and conversely "I felt lost and didn't know what to do". The results were as follows for both questions: learners at Sierra School responded with 87 per cent agreement with statement one and 100 per cent disagreement with statement two; Kilo School's learners responded at 75 per cent and 85 per cent; while Bravo School's learners responded at 67 per cent to both questions. These results were high percentages, which indicated an overall positive engagement with their learning. However, the way IBL was implemented could account for the small differences between the schools. The first difference was how the schools approached their inquiry, namely, whether they used a problem or a question. As stated previously, Kilo School did not highlight the question for their learners' inquiry, but Sierra School did, while Bravo School phrased their question in the form of a problem. Secondly, the length of the task and time allocated at Sierra School was limited to just over 2 hours excluding presentation time, when compared to the three days set aside by Bravo School and the ongoing weekly lessons at Kilo School. The lessons at Sierra School and Kilo School were seen as part of the school day, whereas the timetable was collapsed for the IBL at Bravo School. These differences in implementation could account for some of the varied responses to the questions and the ability of learners to fully participate in the process.

5.4.3.5. Differences in the use of technology

All three schools made extensive use of technology, but, as mentioned previously, this caused some frustration. The difference in approach was that at Bravo School they made use of a shared device, whereas at the other schools the learners each had their own devices. When asked whether the work was shared fairly, only 38 per cent of the learners at Bravo School agreed with this statement. During the learners' interviews, I probed this finding, and the learners revealed that their complaints were based on their perception that they did not have fair access to the shared device. For example, Bravo Learner 5 stated, "*My partner, she hogged the laptop*". At the other end of the spectrum, I observed at Kilo School that some of the girls did not interact with others, because of a

preoccupation with researching the content on their own devices. Haßler, Major and Hennessy (2016) indicated that when many learners were allocated to one device, it encouraged discussion and therefore it led to a more detailed final product. They suggested that allocating two learners to one device was more effective than each learner having access to individual devices. This study's findings did not support this study's research, as there was far less conflict and more task focus and motivation when each of the learners had their own device. However, a qualification to this observation was that there were times when these learners were not as engaged with their group, because they were working on their individual devices.

The overall experience of IBL for the majority of learners indicated that they felt included and able to participate in the learning. There were aspects of the pedagogy that the teachers needed to monitor more closely in order to promote inclusive practice, particularly in relation to interactions among the peers. However, these aspects were highlighted by a minority of learners, and some of these challenges were overcome through the process of participating in IBL. The next section showed the extent to which the teachers and learners' experiences matched, by considering similarities and differences between individual responses.

5.5. The Extent to Which Individual Participation of Both Teachers and Learners in IBL Were Congruent

This section presented the findings related to the fourth research sub-question and discussed the level of similarities and differences between the teachers and learners' perspectives of the IBL lesson. There was general congruence between the learners and the teachers' experience of IBL, as they were positive and enthusiastic about this form of learning. The benefits identified by the teachers and the learners were the following: the level of engagement and enjoyment; the acquisition of skills and knowledge; and, the collaboration. For example, Sierra Learner 7 stated in her questionnaire, "*It was fun to learn about new things"* and Teacher Chi reflected, *"I'm teaching with more meaning"*. This form of learning was perceived as inclusive as shown by many positive responses, although some challenges were highlighted too.

The teachers and learners identified challenges to IBL's inclusive potential, although they placed emphasis on different aspects. For the learners, the most challenging factor was

their relationships and interactions with their peers (40 per cent). However, they also included these potential barriers in their reflections: their engagement with content; the support received from teachers and their peers; individual characteristics, such as distractibility; and, problems with technology. The five teachers also mentioned collaboration and peer interactions as an issue. However, they saw this issue as one of the challenges, but not the predominant one. They identified different challenges which they gave equal status, such as the learners' limited skills; the teacher's role as facilitator; and implementation which focused on the need for structure, planning and providing support. The teachers briefly reflected on the use of technology as a potential barrier to learning, but the teachers' reflections on the use of technology was limited and mostly positive. An example, Teacher Chi stated, *"I might use Apple Classroom … so I can monitor from my iPad …* (but) *I could see they were all engaged and working"*. The teachers' views focused on how to solve these problems and what the best strategies were for them to employ. Another example was that Teacher Gamma reflected on her change in strategy to encourage peer cooperation. She stated, *"Once I did that Kagan* (cooperative group work strategies)*, I mean that was really an 'aha' moment for me"*. This showed an inclusive way of approaching problems, because it displayed the proactive way that Teacher Gamma focused on finding solutions to encouraging effective group work in her lesson. The learners, particularly at Kilo School, also seemed to display this problem-solving attitude, as they were able to manage and solve many of the challenges they faced. This was expressed by Kilo Learner 6 who stated, "*I got a little confused on how everything worked out but managed to get back on track and do it*".

As the teachers and learners reported mostly sharing similar experiences during IBL, and the themes and the individual experiences have been analysed and the findings discussed, it is now possible to turn to the main research question. This question asked whether IBL could be viewed and experienced inclusively.

5.6. The Extent to which the Experiences of an IBL Pedagogy Promoted Inclusive Participation

The main question that this study raised and has tried to answer was whether IBL promoted inclusion or not. After taking into consideration the learners and teachers' views as well as my own in the role as the observer, it is evident that IBL does have the ability to promote inclusive participation. According to the criteria laid out by Florian and

Black-Hawkins (2011) mentioned in Chapter 2, the three lessons I observed did fulfil the conditions for an inclusive pedagogy. First, there was a focus on learning for all rather than concentrating on learners with special needs. This was clear during observations as all the learners were treated equally and there were the same expectations of success. Secondly, there was no evidence that deterministic beliefs about ability were present and all learners were seen as being able to contribute to each other's progress. The use of heterogeneous grouping, and the way the teachers encouraged and supported the learners throughout the process, this all contributed towards an inclusive experience for the learners. Finally, it was clear that teachers viewed the difficulties that learners experienced as challenges towards new ways of working. This was apparent in the way the teachers adapted their teaching throughout the process to cater for the learners' different needs. Examples were the way the Bravo School teachers introduced a checklist during the process and Teacher Chi's use of keywords on the board to prompt thinking and focus. This support was geared towards the whole class and not just individual learners. The teachers supported and treated each learner with dignity and care, and the idea that any learners might have had deficits was not evident in their teaching practices.

However, there were aspects that needed to be monitored to ensure inclusivity, for example: collaboration among the groups; how IBL was implemented; the teacher's role during IBL; how the lesson's level was structured; how teachers and peers provided support to the learners; and, the use of technology. These issues would need to be carefully considered, as they could not only contribute to inclusivity but also hamper it. The flexibility, as well as the problem-solving and solution-focused nature of IBL, allowed for adjustments to be made according to the learners' needs during implementation. This was observed in the three schools. Overall, the feedback from teachers and learners was predominately positive, and they agreed that participation in this form of learning was worthwhile and productive.

5.7. Conclusion

This chapter provided a discussion and analysis of the findings presented in Chapter 4. The analysis was structured around the main research question and four sub-questions posed in Chapter 1. IBL was shown as a way of teaching that had the potential to be inclusive; the teachers and the majority of learners in this study confirmed this

possibility. While some challenges were experienced with IBL, strategies were implemented by the teachers to address most of them. This analysis provided the basis for the recommendations, limitations and suggestions for further study to be presented in the next chapter.

CHAPTER 6: OVERVIEW, RECOMMENDATIONS AND LIMITATIONS

"That is, in the inclusive pedagogical approach, teachers focus on how to make rich learning opportunities available for everybody so that all learners can participate in the community of the classroom" (Black-Hawkins, 2017, p.13).

6.1. Introduction

This chapter is separated into four parts. The first section provides an overview of the research and its related conclusions. Next, the second section summarises the implications and recommendations based on the results of this research. The third section presents some of the limitations of the study. Finally, the fourth section makes suggestions for further research.

6.2. Overview of Research

Chapter 1 served to introduce and provide background to the study. It was here that the question was posed as to what extent IBL could be an effective pedagogy for inclusive practice. In Chapter 2, the conceptual, theoretical and philosophical underpinnings of the research was examined. The influence of constructing knowledge around subjective beliefs and experiences was highlighted. Next, there was a presentation of the work of theorists who advocated for the importance of active learners, who constructed their own knowledge via experiential learning. Chapter 3 provided the methodological approach to the study, where its approach, using mixed methods, allowed for the collection of both quantitative and qualitative data. These included document analysis, classroom observation, interviews and questionnaires.

Findings extrapolated from this study were presented in Chapter 4 and discussed in Chapter 5. They provided insight from the teachers and learners' perspective about a pedagogy that had the potential, if it was well-guided, to allow the whole class to participate actively in their learning. The reflections about IBL from both teachers and learners were mostly positive and they were able to describe their feelings of confidence and enjoyment while learning. IBL allowed all the learners to participate in many ways while learning. However, there were some barriers that were identified that had the

potential to impact negatively on IBL's inclusive potential. These included the following: the interactions of learners during collaboration and group work; the use of technology to aid learning; the learners' ability to engage with the content; the individual personality characteristics of learners, such as distractibility and shyness; the quality of support provided by both the teachers and peers; the level of learners' skills and knowledge development; the teachers' choices when implementing the lesson; the role of the teacher as a facilitator to learning; and, finally, the impact of the learners' attitudes towards IBL in practice. As much as these factors would potentially cause exclusion, they could also add to the inclusive potential of IBL, if they were well managed. Based on the findings, it was revealed that IBL had the potential to be an effective pedagogy that promoted inclusive practice. However, there were significant amounts of teacher intervention and structuring that might have contributed to IBL's inclusive potential.

6.3. Recommendations for the Implementation of IBL

When implementing an IBL module, it is necessary that certain recommendations are taken into account to maximise the inclusive potential of the learning situation. These recommendations are extrapolated from the findings in Chapter 5.

The first recommendation addresses the understanding and attitudes of the teacher. It is important that the teachers have a good understanding of inclusivity and what constitutes an inclusive learning environment. This requires that the teacher values and embraces student diversity and sets up a classroom environment that encourages these values. The teachers' understanding of IBL is also vital in that it has an impact on their ability to implement this form of learning.

The second recommendation involves the support and monitoring provided by the teacher to the learner so that the environment caters for their needs and individual personality characteristics. This support can be pre-planned as well as incidental. The needs of the class inform the structuring of the task, the scaffolding provided and teacher's role as facilitator and mentor during the learning. The support provided can be to help understand content, provide guidance through the learning process or to help reflect on learning. The structure and scaffolding can take on a variety of forms and can be tailored to the needs of the students. Structure that was highlighted as particularly important in the study was around ensuring that the question or problem was made explicit. Scaffolding that was

mentioned was strategies that ensured that resources and content was made accessible and manageable. This guided approach to IBL ensures that all the learners would be able to conduct the inquiry which could prevent anyone from being excluded. This seems to be particularly important for younger learners who require more structuring and scaffolding than their older counterparts.

The third recommendation pertains to managing collaborative learning. This aspect of IBL was highlighted by both teachers and learners as incredibly important to the inquiry process. It is also a source of inclusivity as well as exclusion, therefore, managing these interactions appropriately is vital to encouraging the inclusive potential of IBL. This involves encouraging communication skills, mutual support, conflict resolution, individual accountability and the use of heterogeneous groupings. The teachers would need to employ various strategies in order to guide and manage collaboration to allow for productive group work.

There were other pertinent recommendations that would need to be considered during the planning and implementation of an IBL lesson. These came from feedback from both learner and teacher interviews. There was positive learner feedback around having a choice in an aspect of their learning. Favourable feedback on the length of the task tended towards being on shorter rather than longer units of work. The use of technology and devices is encouraged as very useful, however, teachers need to monitor its effectiveness through an inclusive lens and particularly when sharing devices verses learners having their own devices.

.

6.4. Limitations of this Study

There are limitations which were identified during the research process. These included the sampling location, the target respondents and time limitations. These shortcomings will be discussed in further detail and have the potential to provide impetus for further potential research topics. These limitations, however, did not impact on the value and substance of this study. The results were a true reflection of the defined context in which the study took place, namely independent girls' schools.

6.4.1. Sampling location

One of the main limitations to this study is the context in which this research was conducted. The three schools in the sample were independent, well-resourced and they catered for an affluent community. These schools also prioritised inclusion as an important consideration when planning and implementing lessons. The applicability of these findings to all South African schools would thus be severely limited. IBL is not necessarily about how many resources a school has, although the lack thereof could potentially make its implementation a challenge. But the majority of public schools in South Africa are under-resourced and over-burdened: they have overcrowded classrooms; lack space for learner discussions; lack equipment to enable investigations; and, there is a lack of resources to make learning stimulating, relevant and challenging (Englebrecht & Green, 2018). This could have a significant impact on the ability of IBL to be used for the purpose of inclusion in these environments.

6.4.2. Target respondents

This study focused on learners in the intermediate phase, which meant that the applicability of these results to either the foundation or senior phase learners might be limited. Within the intermediate phase, Grade 4 and 6 learners were part of the sample. It was fortuitous that I was able to focus on learners at the beginning and at the end of the phase, as this enabled some interesting observations and dissimilarities, such as differences in their cooperative learning experiences. Further research could address a discussion round age and IBL.

6.4.3. Time limitation

Some IBL modules ran over many sessions and some were implemented as part of a programme over the whole year. The researcher had a limited time within each of the schools and was able to observe only a portion of the schools' IBL programme. A longitudinal study might prove to be enlightening, as far as gathering information about the learners' progress and their ability to develop skills. It could also show the teachers' growth, as they become more familiar with the pedagogy. This would have a direct impact on the capability of IBL to play an important role in inclusive education.

6.5. Implications for Future Research

The implications of this study for further research are exciting, as many interesting questions arose throughout the research process. Some of these questions were linked to the following: the study's limitations; the differential findings between the schools; and, through the implementation of IBL itself.

As far as addressing the studies limitations, the first possibility is that a larger study could be conducted in schools that are not independent and monastic. This means targeting public schools that might implement IBL. This study could also be expanded into the different phases of schooling, other than the intermediate phase, so that the results obtained in this study would be compared with either older or younger children. As mentioned in the limitations, a longitudinal study might also be beneficial in gauging teachers and learners' development and its impact on inclusivity. This could address any potential developments in the learner's inquiry skills over time, with repeated exposure to this form of learning, that could potentially increase or decrease IBL'S inclusivity.

The differential findings in the three schools lead to questions that can be expanded on through further study. All of these could be researched separately with regards to their effects on inclusivity and the learners' participation in IBL Firstly, the impact of age on inquiry and collaboration requires further investigation. This study included learners from different age groups and the results gathered regarding collaboration indicated that age could potentially play a role in effective group work. It would therefore be worthwhile to research the effect of age on collaborative activities, especially if the age difference was even larger than the one in this study. Leman (2015) advocated specifically for more research on the ways group work connected with learning as well as the impact of age on these interactions. The second potential research topic also relates to collaboration. This is the use of different group sizes on the efficacy of collaboration and group dynamics. This topic could explore the best size of groups and the number of participants for optimal group cohesion. This study had groups of two, three, four and six in the sample and varied collaboration feedback was received from the different combinations, with four participants showing the most cohesion. Further study could either prove or disprove this finding.

A third area that could potentially be investigated further, is that of a single class versus a whole grade implementation of an inquiry. This study has examples of both and a more detailed study, where this was the specific target of the research question, could investigate this variable and its impact on inclusivity. Fourthly, researching whether utilising a question versus a problem as the base of the inquiry could lead to differential results could be beneficial. This could consequently have an impact on the inclusive potential of these alternative approaches. In this study there were examples of both of these approaches. Fifthly, feedback from the learners and teachers were received with regards to the length of the inquiry. Further investigation on the effect of the length and complexity of the task could reveal interesting results with regards to the tasks effectiveness, student motivation and engagement and inclusivity. Finally, the use of technology within the inquiry task could be studied. A particular focus on the difference and effectiveness of sharing devices over learners utilizing individual devices could be examined. There was a fair amount friction reported by learners around negotiating the use of a shared device in this study. It would be worthwhile to explore whether this is an overall trend when making use of devices during learning.

With regards to the implementation of IBL, all three schools made use of a guided model of inquiry. The teachers in all examined contexts provided a significant amount of structure, support, guidance and scaffolding to the learners. It might be valuable to conduct research in a context which uses an unstructured inquiry as a pedagogy, where teachers provide less guidance and more independence from the learners is encouraged. It would be valuable to investigate its impact on inclusivity. Once again other variables could be examined separately within this unstructured format of IBL, variables such as age, previous IBL experience and skills development.

6.6. Conclusion

This research on IBL has shown exciting benefits. It is a pedagogy that allows diverse learners to interact and to learn in an environment that sees their differences as an advantage. The unique perspective of individuals is developed through collaboration, facilitated by the answering of pertinent questions, and problems are solved by considering different viewpoints. IBL also allows the teachers to interact individually with the learners via facilitation and to support their development effectively.

REFERENCES

Abels, S. (2015). Scaffolding inquiry-based science and chemistry education in inclusive classrooms. In N.L. Yates (Ed.), *New Developments in Science Education Research.* New York: Nova Science Publishers, Inc.

Väyrynen, S. (2015). A glance at inclusion in a small Finnish community: Essential teacher competencies. In E.L. Walton & S. Moonsamy (Eds.), *Making education inclusive*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Adderley, R., Hope, M., Hughes, G., Jones, L. Messiou, K. & Shaw, P. (2015). Exploring inclusive practices in primary schools: Focusing on children's voices. *European Journal of Special Needs Education, 30*(1), 106-121.

Ainscow, M. & Kaplan, I. (2005). Using evidence to encourage inclusive school development: Possibilities and challenges. *Australasian Journal of Special Education 29*(2), 106-116.

Ainscow, M. & Kaplan, I. (2004). Using evidence to encourage inclusive school development: Possibilities and challenges. Paper presented at the Australian Association of Research in Education Annual Conference, Melbourne, Australia. Retrieved from https://www.researchgate.net/profile/Mel_Ainscow/publication/228420159

Apugliese, A., & Lewis, S. E. (2017). Impact of instructional decisions on the effectiveness of cooperative learning in chemistry through meta-analysis. *Chemistry Education Research and Practice*, *18*(1), 271-278.

Arnold, P. (1985). Vygotsky and the education of the deaf child. *Journal of the British Association of Teachers of the Deaf, 9*(2), 29-32.

Arnold, P. (1985). Piaget, Furth and education of the deaf child. *Journal of the British Association of Teachers of the Deaf, 9*(2), 17-20.

Badenhorst, C. (2007). *Research writing: Breaking the barriers*. Pretoria: Van Schaik.

Bell, J. (2014). *Doing Your Research Project: A guide for first-time researchers*. Berkshire: McGraw-Hill Education.

Belland, B. R., & Drake, J. (2013). Toward a framework on how affordances and motives can drive different uses of scaffolds: Theory, evidence, and design implications. *Educational Technology Research and Development*, *61*(6), 903-925.

Belland, B.R., Glazewski, K.D., & Ertimer, P.A. (2009). Inclusion and problem-based learning: Roles of students in a mixed-ability group. *Research in Middle Level Education Online, 32*(9), 1-9.

Bernhard, R. (2019). Using mixed methods to capture complexity in an empirical project about teachers' beliefs and history education in Austria. *History Education Research Journal*, *16*(1), 63-73.

Black-Hawkins, K. (2017). Understanding inclusive pedagogy. In V. Plows & B. Whitburn (Eds.), *Inclusive Education*. Rotterdam: Sense.

Booth, T., Ainscow, M., Black-Hawkins, K., Vaughan, M., & Shaw, L. (2002). Index for inclusion. *Developing learning and participation in schools*, *2*.

Chu, S. K.W., Tse, S.K., & Chow, K. (2011). Using collaborative teaching and inquiry project-based learning to help primary school students develop information literacy and information skills. *Library & Information Science Research*, *33*(2), 132-143.

Clark, R. E., Kirschner, P. A., & Sweller, J. (2012). Putting Students on the Path to Learning: The Case for Fully Guided Instruction. *American Educator, 36*(1), 6-11.

Cohen. L., Manion, L. & Morrison. K. (2011). *Research methods in education* (7th ed.). London: Routledge.

Creswell. J.W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Upper Saddle River, NJ: Pearson.

Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Dewey, J. (1923). *Democracy and education: An Introduction to the philosophy of education.* New York: Macmillan.

Department of Social Development (2016). *White paper on the rights of persons with disabilities*. Government Gazette, 4 No. 39792

Dharan, V. (2015) Engraining inclusive pedagogy: The role of teacher educators in the practicum and beyond. In E.L. Walton & S. Moonsamy (Eds.), *Making education inclusive*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Engelbrecht, P. (2006). The implementation of inclusive education in South Africa after ten years of democracy. *European Journal of Psychology of Education, 21*(3), 253.

Engelbrecht, P. (2011). Equity in inclusive education in South Africa. In A. Artiles, E. Kozleski, & F. Waitoller (Eds.), *Inclusive education* (pp. 147-160). Cambridge, MA: Harvard Education Press.

Engelbrecht, P. & Green, L. (2018). *Responding to the challenges of inclusive education in Southern Africa (2nd ed.).* Pretoria: Van Schaik.

Filippatou, D., & Kaldi, S. (2010). The effectiveness of project based learning on pupils with learning difficulties regarding academic performance, group work and motivation. *International Journal of Special Education, 25*(1), 17-26.

Florian, L. (2009). Towards inclusive pedagogy. In P. Hick, R Kershner & P. Farrell (Eds.) *Psychology for inclusive education: new directions in theory and practice.* London: Routledge

Florian, L. (2015). Inclusive Pedagogy: A transformative approach to individual differences but can it help reduce educational inequalities. *Scottish Educational Review*, *47*(1), 5-14.

Florian, L. (2019). On the necessary co-existence of special and inclusive education. *International Journal of Special Education, 23*(7-8), 691-704.

Florian, L., & Black- Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal, 37*(5), 813-828.

Florian,L., & Spratt,J. (2013) Enacting inclusion: a framework for interrogating inclusive practice. *European Journal of Special Needs Education, 28(2),* 119-135

Forslund Frykedal, K., & Hammar Chiriac, E. (2018). Student collaboration in group work: Inclusion as participation. *International Journal of Disability, Development and Education*, *65*(2), 183-198.

Gall, M.D., Gall, J.P., & Borg, W.R. (2007). *Educational research: An introduction.* (8th ed.). Boston, MA: Pearson.

Glassman, M. (2001). Dewey and Vygotsky: Society, experience and inquiry in educational practice. *Educational Researcher, 30*(4), 3-14.

Guven, Y., & Duman, H.G. (2007). Project based learning for children with mild mental disabilities. *International Journal of Special Education, 22*(1), 77-82.

Haßler, B., Major, L., & Hennessy, S. (2016). Tablet use in schools: A critical review of the evidence for learning outcomes. *Journal of Computer Assisted Learning*, *32*(2), 139-156.

Hmelo-Silver, C.E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review,* 16(3), 235-266.

Hmelo-Silver, C.E., Duncan,R. G., & Chinn, C.A. (2007). Scaffolding and achievement in problem-based and inquiry learning: A response to Kirschner, Sweller and Clark. *Educational Psychologist, 42*(2), 99-107.

Ivankova, N.V., & Creswell, J.W. (2009). Mixed methods. In J. Heigham & R. Croker (Eds.), *Qualitative research in applied linguistics: A practical introduction.* New York, NY: Palgrave Macmillan.

Kirschner, P., Sweller, J., & Clark, R. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist discovery, problem-based, experiential and inquiry-based teaching. *Educational Psychologist, 41*(2), 75-86.

Koopman, O. (2017). Phenomenology as a method in education research. In *Science Education and Curriculum in South Africa*. Cham: Palgrave Macmillan.

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy, 45*(3), 214-222.

Lange, C., Costley, J., & Han, S. L. (2016). Informal cooperative learning in small groups: The effect of scaffolding on participation. *Issues in Educational Research*, *26*(2), 260-279.

Lazonder, A.W., & Harmsen, R. (2016). Meta-analysis of inquiry-based learning: Effects of guidance. *Review of Educational Research*, *86*(3), 681-718.

Leman, P. J. (2015). How do groups work? Age differences in performance and the social outcomes of peer collaboration. *Cognitive science*, *39*(4), 804-820.

Lichtman, M. (2012). *Qualitative research in education: A user's guide*, Thousand Oaks, CA: Sage publications.

Lodico, M.G., Spaulding, D.T., & Voegtle, K.H. (2006). *Methods in educational research: From theory to practice.* San Francisco, CA: Jossey-Bass.

Makoelle, T.M. (2012). The state of inclusive pedagogy in South Africa: A literature review. *Journal of Sociology and Social Anthropology*, *3*(2), 93-102.

Makoelle, T.M. (2014). Changing teacher beliefs and attitudes towards inclusion in South Africa: Lessons from collaborative action research. *Journal of Social Sciences*, *38*(2), 125-134.

McMillian, J.A., & Schumacher, S. (2010). *Research in education: Evidence-based inquiry* (7th ed). New Jersey: Pearson.

Mayer, R.E. (2004). Should there be a three-strike rule against pure discovery learning? The case for guided methods of instruction. *American Psychologist, 59*(1),14-19.

Miles, S., & Ainscow, M. (2011). *Responding to diversity in schools: An inquiry-based approach.* London: Routledge

O'Loughlin, M. (1992). Rethinking science education: Beyond Piagetian constructivism toward a sociocultural model of teaching and learning. *Journal of Research in Science Teaching, 29*(8), 791-820.

Pedaste, M., Mäeots, M., Siiman, L.A., de Jong, T., van Riesan, S.A.N., Kamp, E.T., Manoli, C.C., Zacharia, Z.C., & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review, 14*, 47-61.

Piaget, J. (1976). Piaget's theory. In *Piaget and his school*. Berlin: Springer

Reid, D. J., Zhang, J., & Chen, Q. (2003). Supporting scientific discovery learning in a simulation environment. *Journal of Computer Assisted Learning*, *19*(1), 9-20.

Scott, D., & Morrison, M. (2006). *Key ideas in educational research*. London: Continuum

Simpson, M., & Tuson, J. (2003). *Using Observations in Small-Scale Research: A Beginner's Guide.* Edinburgh: University of Glasgow.

Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary educational psychology*, *21*(1), 43-69.

Spronken-Smith, R., Bullard, J.O., Ray, W., Roberts, C., & Keiffer, A. (2008). Where might sand dunes be on Mars? Engaging students through inquiry-based learning in geography. *Journal of Geography in Higher Education, 32*(1), 71-86.

Thanh, N. C., & Thanh, T. T. (2015). The interconnection between interpretivist paradigm and qualitative methods in education. *American Journal of Educational Science*, *1*(2), 24-27.

ThinkExist.com Quotations. "Confucius quotes". *ThinkExist.com Quotations Online* 1 Feb. 2020. 8 Mar. 2020 http://thinkexist.com/quotes/confucius/

ThinkExist.com Quotations. "Ignacio Estrada quotes". *ThinkExist.com Quotations Online* 1 Feb. 2020. 8 Mar. 2020 http://thinkexist.com/quotes/ignacio_estrada

Trent, A.J., Artiles, C.S. & Englert, S. (1998). From deficit thinking to social constructivism: A review of theory, research, and practice in special education. *Review of Research in Education, 23*(1), 277-307.

Türkmen, H. (2009). An effect of technology based inquiry approach on the learning of "Earth, Sun & Moon" subject. *Asia-Pacific Forum on Science Learning and Teaching,10*(1), 1-20

United Nations Educational, Scientific, and Cultural Organization, Paris (France). (2005). *Guidelines for inclusion: Ensuring access to education for all*. ERIC Clearinghouse.

Väyrynen, S. (2015). A glance at inclusion in a small Finnish community: Essential teacher competencies. In E.L. Walton & S. Moonsamy (Eds.), *Making education inclusive*. Newcastle upon Tyne: Cambridge Scholars Publishing.

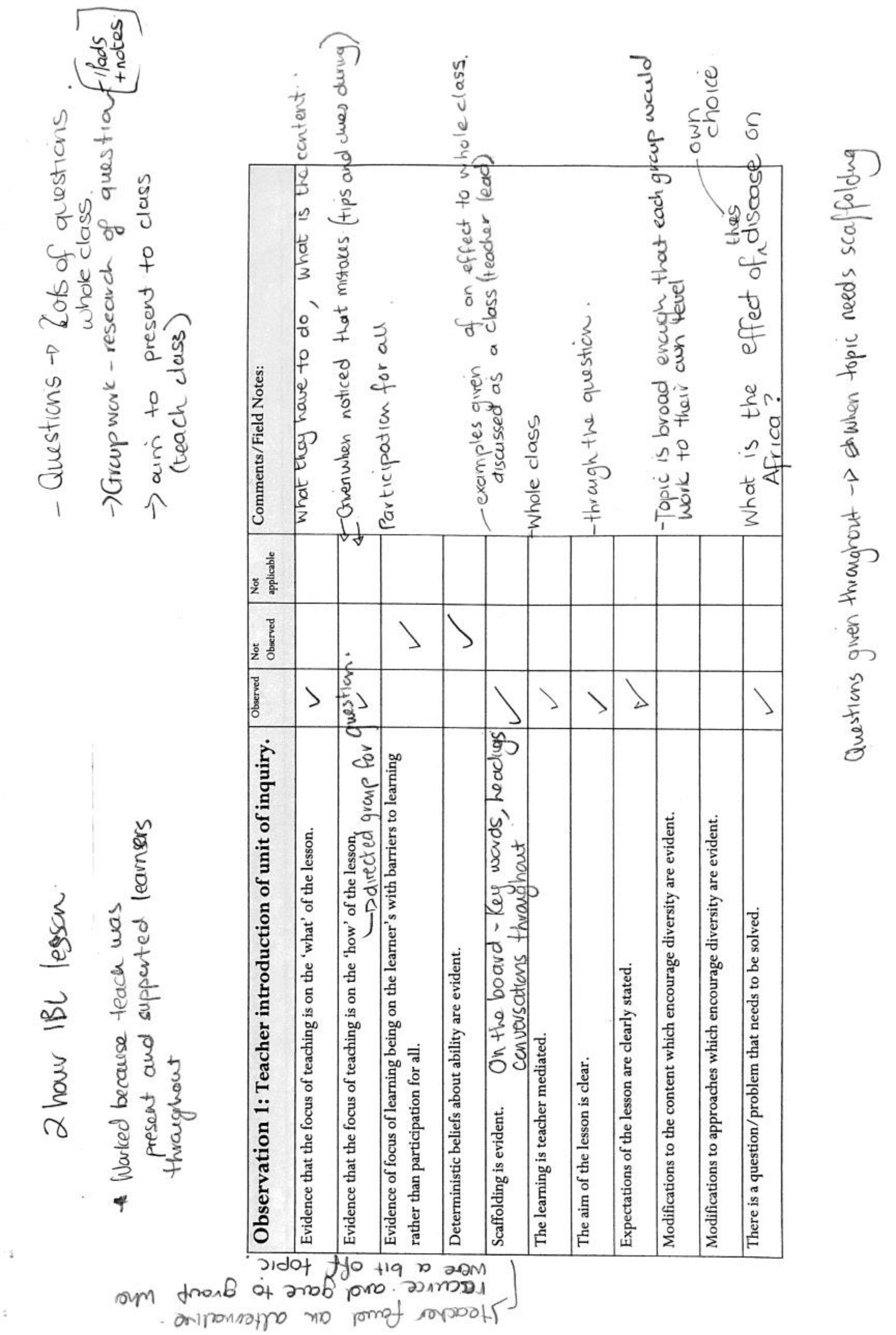
Vygotsky, L.S. (1978). *Mind: In society.* Cambridge, MA: Harvard University Press.

Walton. E., Nel. N. Hugo. A., & Muller. H. (2009). The extent and practice of inclusion in independent schools in South Africa. *South African Journal of Education. 29*(1), 105 -126.

Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The qualitative report*, *4*(3), 1-14.

APPENDIX A- DATA COLLECTION INSTRUMENTS

An Example of a classroom observation checklist and fieldnotes:



2 hour IBL lesson

* Worked because teach was present and supported learners throughout

- Questions -> Lots of questions whole class.
->Group work - research of question (Ipads + notes)
-> aim to present to class (teach class)

Observation 1: Teacher introduction of unit of inquiry.	Observed	Not Observed	Not applicable	Comments/Field Notes:
Evidence that the focus of teaching is on the 'what' of the lesson.	✓			What they have to do, what is the content.
Evidence that the focus of teaching is on the 'how' of the lesson. ->directed group for question.	✓			Given when noticed that mistakes (tips and clues during)
Evidence of focus of learning being on the learner's with barriers to learning rather than participation for all.		✓		Participation for all
Deterministic beliefs about ability are evident.		✓		-examples given of an effect to whole class. discussed as a class (teacher lead)
Scaffolding is evident. On the board - Key words, headings conversations throughout	✓			
The learning is teacher mediated.	✓			-Whole class
The aim of the lesson is clear.	✓			-through the question.
Expectations of the lesson are clearly stated.	✓			
Modifications to the content which encourage diversity are evident.				-Topic is broad enough that each group would work to their own level
Modifications to approaches which encourage diversity are evident.				own choice
There is a question/problem that needs to be solved.	✓			What is the effect of the disease on Africa?

Teacher found an alternative resource and gave to group who were a bit off topic.

Questions given throughout -> when topic needs scaffolding

The question/problem has got an already known answer.	✓yes.			-"Why are we learning about this?"
There are authentic teachable moments brought about when searching for solutions to the problem/question.	✓			
Social interaction for discovery is encouraged.	✓			
There is evidence of active learning around a central question.	✓			

Scaffolding → Words written on board during lesson to direct thinking + scaffold learning

Teacher – "What are you doing?" "What have you done so far."

Some girls in particular group distracted others allowing to do more in the task. Spend ages on the heading + prettying not work, off topic - teacher redirected

iPads used for research.

(Collaborating on Pages)

(1) Henry group.

Observation 2: Learner Interactions	Observed	Not Observed	Not applicable	Comments/Field Notes:
All learners were engaged. Mostly engaged on topic		✓		At times distracted by other things on iPads
All learners were able to participate.	✓			- 1 learners iPad not working (shared)
There were learners not interacting.		✓		→ Part of group missing - but came back
There were learners not on task.		at times	but mostly on task	
There were learners who looked confused.	✓			but scaffolding + assistance given; comfortable to ask questions
The learners were able to get assistance when required.	✓			- went to library, asked questions.
There was evidence of scaffolding in order to assist those requiring help.	✓	—	—	Given to everyone on the board.
The teacher and other adults in the class were able to interact with all learners in a meaningful way.	✓			- Walking around while busy asking questions + directing focus - Sat with someone who was isolated
Evidence of formative assessment being used to support learners.		✓		
Heterogeneous grouping of learners.	✓			- Grouped according to interest in topic Chose own topic. (of a list given)
Evidence of difficulties being seen as challenges for new ways of working.				
Evidence of difficulties being seen as deficits in the learner.		✓		
Various ways of working to support learners is evidenced.	✓			
Teachers and other adults approach all learners in a respectful and dignified manner. (intern arrived during the lesson and assisted various groups)	✓			- Teacher was having worthwhile conversations with individual groups.

also directed scaffolded and focused.

It is clear that some learners found IBL a challenging form of learning.				- Were able to ask each other
Learners are able to work independently.	✓			
Overall there was an inclusive approach to all learners.	✓			

learners at back not listening to all the scaffolding, explanations - at beginning but repeated regularly

Examples of self-reflection questionnaires from two different age groups:

Name: [redacted] Age: 12

Circle the answers you agree with. You can circle as many options as you like.

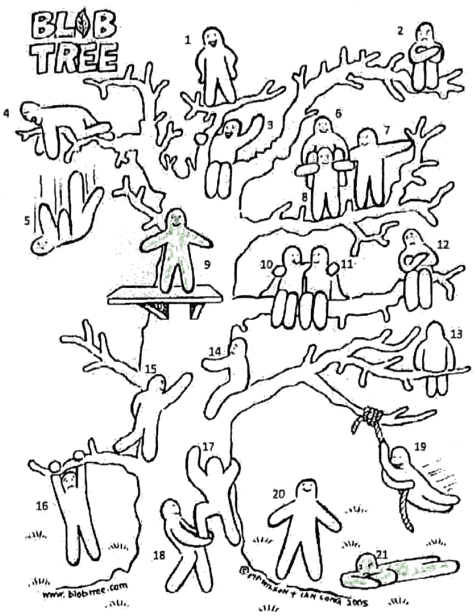
1. I generally enjoy working:
   a. in a group
   b. by myself
   c. with a partner

2. I generally find school work
   a. easy
   b. difficult
   c. average

	Colour the block that describes your experience with this task best:	Yes	Maybe	No	I don't know
1	I enjoyed working in my group on this task.*		✓		
2	Everyone worked together well.*	✓			
3	The work was shared fairly.*		✓		
4	I felt that I was able to do the work	✓			
5	I felt that the work was too difficult.			✓	
6	If I needed help, I knew where to go.	✓			
7	I felt lost and didn't know what to do.			✓	
8	I felt like I was welcome in my group.*	✓			
9	I felt like I was an important member of the class.		✓		
10	Other learners were kind to me.	✓			
11	Other learners were helpful to me.		✓		✓
12	I was busy with the task/project all the time.		✓		
13	I felt like I knew what I was doing.		✓		
14	I enjoyed learning.		✓		

Colour in the figures on the Blob Tree that best describes how you felt while working on this task. You may colour in more than one. Please explain why you chose these particular figures.

I chose theese figures because I sometimes felt a bit bored and annoyed at how long this project is taking and how many steps there are but most of the time once I got going it was fine and enjoyable.



The most interesting thing I learnt while working on this task was:

I learnt a lot about my Explorer, Henry Hudson but the most interesting thing a learnt was about his discoveries and I also ~~enjoy~~ learnt a lot ~~about~~ from the Everest talk which I realy liked.

What else would you like to add about your experience while working on this task?

The different tasks and the dinner party are/were going to be very exciting and I can't wait!

Name: [redacted] Age: 9 years old

Circle the answers you agree with. You can circle as many options as you like.

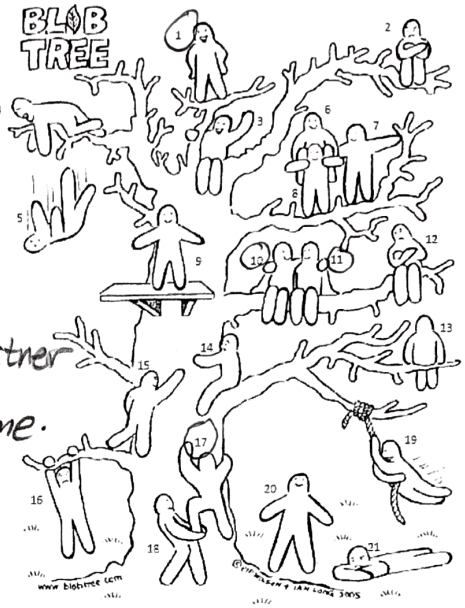
1. I generally enjoy working:
   a. in a group
   b. by myself
   c. with a partner

2. I generally find school work
   a. easy
   b. difficult
   c. average

	Colour the block that describes your experience with this task best:	Yes	Maybe	No	I don't know
1	I enjoyed working in my group on this task.*	✓			
2	Everyone worked together well.*		✓		
3	The work was shared fairly.*	✓			
4	I felt that I was able to do the work	✓			
5	I felt that the work was too difficult.			✓	
6	If I needed help, I knew where to go.	✓			
7	I felt lost and didn't know what to do.			✓	
8	I felt like I was welcome in my group.*	✓			
9	I felt like I was an important member of the class.	✓			
10	Other learners were kind to me.	✓			
11	Other learners were helpful to me.		✓		
12	I was busy with the task/project all the time.		✓		
13	I felt like I knew what I was doing.		✓		
14	I enjoyed learning.	✓			

Colour in the figures on the Blob Tree tha[redacted] on this task. You may colour in more than one. Please explain why you chose these particular figures.

17. I chose this blob because some people where helping me when I was stuck. 10.11. I felt like these blobs becaus my partner was working well with me. 1. I felt like this blob because I was Proud of my work.



The most interesting thing I learnt while working on this task was:

that you need to be equal with your partner so you both get a turn to do something.

What else would you like to add about your experience while working on this task?

I would like to add that it is nice to have a partner because if you maybey forget something your partner might remember.

APPENDIX B- ETHICS CLEARANCE

Wits School of Education

27 St Andrews Road, Parktown, Johannesburg, 2193 Private Bag 3, Wits 2050, South Africa.
Tel: +27 11 717-3064 Fax: +27 11 717-3100 E-mail: enquiries@educ.wits.ac.za Website: www.wits.ac.za

18 April 2019

Student Number: 9501485H

Protocol Number: **2019ECE011M**

Dear Michelle Decker

Application for Ethics Clearance: Master of Education

Thank you very much for your ethics application. The Ethics Committee in Education of the Faculty of Humanities, acting on behalf of the Senate has considered your application for ethics clearance for your proposal entitled:

The committee recently met and I am pleased to inform you that clearance was granted. However, there were a few small issues which the committee would appreciate you attending to before embarking on your research.

The following comments were made:

- Title: Why the unfamiliar spelling for Pedagogy?
- This is more Low risk as opposed to Medium risk
- Formal permission is pending
- Letter to the principal/rector or other governing body that needs approval
- Learner assent form needed.
- describe which specific risks need to be addressed and how

Please use the above protocol number in all correspondence to the relevant research parties (schools, parents, learners etc.) and include it in your research report or project on the title page.

The Protocol Number above should be submitted to the Graduate Studies in Education Committee upon submission of your final research report.

All the best with your research project.

Yours sincerely,

M Mabelo

Wits School of Education

1

APPENDIX C- LETTERS TO PARTICIPANTS

2019

Dear Madam/ Sir

My name is Michelle Decker I am a Masters Student in the School of Education at the University of the Witwatersrand. I am doing research on Perspectives on the Effectiveness of Inquiry-Based Learning as an Inclusive Pedagogy in Independent Schools in Johannesburg.

My research involves the observation of one Intermediate Phase class and teacher, where the teacher is implementing inquiry/problem-based learning as a pedagogy. I will need to analyse the planning of the unit of inquiry as well as observe the teacher's lesson and learner interactions with the pedagogy of inquiry-based learning. I will use an observation checklist and make field notes during this observation. The learners will then complete a short self-reflection task at the end of the learning experience. I will need to interview selected learners based on their responses on the self-reflection questionnaire. I will also need to interview the teacher to gain an understanding of their experience of inquiry/problem-based learning. Both of these interviews will be recorded for accuracy and reference.

The reason why I have chosen your school is because [school name] is implementing inquiry/problem-based learning as a pedagogy. I am inviting your school to participate in this study to further our understanding of the potential of inquiry/problem-based learning to address the needs of all learners in a single classroom.

The research participants will not be advantaged or disadvantaged in any way. I will obtain teacher, learner and parental consent and assent before conducting the study. Learners and parents will be reassured that they can withdraw their permission at any time during this project without any penalty. There will be learners whose parents will not give them permission to be involved in the study. These learners will still be included in all aspects of the classroom routines and inquiry-based lesson. Their interactions during the classroom observation will not be taken note of and their self-reflection task will not be included in the data collected. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

The names of the research participants and identity of the school will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all published and written data resulting from the study. All research data will be destroyed between 3-5 years after completion of the project. The findings garnered from this research will be used for my research report to obtain a Masters in Inclusive Education and may be published in articles or presented at conferences.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely,

Michelle Decker [Residential Address] [Email Addresss] [Telephone Number]

Supervisor: Dr. Moeniera Moosa [Email Addresss] [Telephone Number]

Please fill in the reply slip below if you agree that your school participates in my study called: Perspectives on the Effectiveness of Inquiry-Based Learning as an Inclusive Pedagogy in Three Independent Schools in Johannesburg.

I, _____ the principal/rector at _____ give my consent for the above research to be conducted at the school.

Sign_____ Date_____

Dear Parent 2019

My name is Michelle Decker and I am a Masters student in the School of Education at the University of the Witwatersrand. I am doing research on Perspectives on the Effectiveness of Inquiry-Based Learning as an Inclusive Pedagogy in Three Independent Schools in Johannesburg. The reason why I have chosen your child's class is because [School Name] is currently implementing inquiry/problem-based learning as a form of learning.

My research involves the observation of teaching and learner interactions in your daughter's class. Your daughter will then be requested to complete a short self-reflection questionnaire at the end of the learning experience. Based on the answers on the questionnaire, I may select your daughter for a short interview to unpack the reasons for her reflection and experiences. This process entails your daughter being observed with the other members of her class as well as completing the self-reflection questions at the end of the lesson. She may be selected for a short interview which will be audio-recorded for accuracy and reference.

Your daughter will not be advantaged or disadvantaged in any way. She will be reassured that she can withdraw her permission at any time during this project without any penalty. Should you choose not to give permission for her to be involved in the study, your daughter will still be included in all aspects of the classroom routines and inquiry-based lesson. Her interactions, however, during the classroom observation will not be taken note of and her self-reflection task will not be included in the data collected. There are no foreseeable risks in participating and your daughter will not be paid for this study. Your daughter's name and identity will be kept confidential at all times and in all academic writing about the study. Her individual privacy will be maintained in all published and written data resulting from the study. All research data will be destroyed between 3-5 years after completion of the project. The findings garnered from this research will be used to obtain my Masters and may be published in articles or presented at conferences.

Please let me know if you require any further information.

Thank you very much for your help.

Yours sincerely,

Michelle Decker [Residential Address] [Email Address] [Telephone Number]

Supervisor: Dr. Moeniera Moosa [Email Address] [Telephone Number]

Please fill in and return the reply slip below indicating your willingness to allow your daughter to participate in the research project called: Perspectives on the Effectiveness of Inquiry-Based Learning as an Inclusive Pedagogy in Three Independent Schools in Johannesburg.

I, _____ the parent of _____ give my consent for the following:

Permission to review/collect documents/artifacts **Circle one**

I agree that my daughter's self-reflection questionnaire can be used for this study only. YES/NO

Permission to observe my child in class

I agree that my daughter may be observed in class. YES/NO

Permission to be interviewed

I agree that my daughter may be interviewed for this study. YES/NO

I know that she can stop the interview at any time and doesn't have to answer all the questions asked. YES/NO

Permission to be audiotaped

I agree that my daughter may be audiotaped during the interview. YES/NO

I know that the audiotapes will be used for this project only. YES/NO

Informed Consent

I understand that:

- My daughter's name and information will be kept confidential and safe and that my name and the name of her school will not be revealed.
- She does not have to answer every question and can withdraw from the study at any time.
- She can ask not to be audiotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of this project.

Sign_____ Date_____

2019

Dear Learner

My name is Michelle Decker and I am a Masters student in the School of Education at the University of the Witwatersrand. I am doing research on inquiry-based learning in schools in Johannesburg.

My investigation involves watching you and the rest of your class while in a lesson. After the lesson is finished you will need to fill in some questions on a worksheet. I might ask to speak to you for a short while at a convenient time to chat about some of your answers. At this meeting I will record your answers so that I make sure to remember exactly what you say.

Remember, this is not a test, it is not for marks and it is voluntary, which means that you don't have to do it. Also, if you decide halfway through that you would prefer to stop, this is completely your choice and will not affect you in any way.

I will not be using your own name but I will make one up so no one can identify you. All information about you will be kept confidential in all my writing about the study. Also, all collected information will be stored safely and destroyed between 3-5 years after I have completed my project. The information gathered from this research may be published in articles or presented at conferences.

Your parents have also been given an information sheet and consent form, but at the end of the day it is your decision to participate in the study.

I look forward to working with you!

Please feel free to contact me if you have any questions.

Thank you

Michelle Decker [Residential Address] [Email Address] [Telephone Number]

Supervisor: Dr. Moeniera Moosa [Email Address] [Telephone Number]

Please fill in the reply slip below if you agree to participate in my study called: Perspectives on the Effectiveness of Inquiry-Based Learning as an Inclusive Pedagogy in Three Independent Schools in Johannesburg.

My name is: _____

Permission to review/collect documents/artifacts	**Circle one**
I agree that my worksheet can be used for this study only.	YES/NO
Permission to observe you in class	
I agree to be observed in class.	YES/NO
Permission to be interviewed	
I would like to be interviewed for this study.	YES/NO
I know that I can stop the interview at any time and don't have to answer all the questions asked.	YES/NO
Permission to be audiotaped	
I agree to be audiotaped during the interview.	YES/NO
I know that the audiotapes will be used for this project only.	YES/NO

Informed Consent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of this project.

Sign_____ Date_____

APPENDIX D- SAMPLE TRANSCRIPT

Transcript of interview with Teacher Chi

Interviewer	First of all, you've been teaching for how many years?
Teacher	15 years
Interviewer	Of which time, how long…
Teacher	Actually 15 years in the primary school
Interviewer	And how long here?
Teacher	Here at [school's name]?
Interviewer	I just wanted to discuss the lesson a bit. Your lesson was on the illnesses in Africa and how did you feel that it went?
Teacher	I thought it went really well and I thought the kids were really engaged and I was happy. It was one of those lessons where…
Interviewer	You felt?
Teacher	This was fine.
Interviewer	How did you feel that the children coped, the girls coped with the lesson?
Teacher	Well, surprising well. In that there were very few times where I thought somebody was not engaging. I felt most of them were engaging.
Interviewer	And your girls that normally find work challenging?
Teacher	Also seemed to be fine and I can't tell you why. It seemed that they just seemed to be okay. Ya maybe because they weren't alone and floundering. They had the others to guide them and nudge them along.
Interviewer	Okay fabulous and um I'm just going to unpack the term inclusion and inquiry-based learning a bit. What is your understanding of inclusion?
Teacher	My understanding is that children if you aren't normally of the same level academically, cognitive ability is below the others. That they actually in class and learn along with the others. That's my understanding.
Interviewer	And what is your definition or understanding of inquiry-based learning?
Teacher	It's where there is a big question to be asked, an important question. So that what they are learning it just sort of gives a bit of, what's the word, meaning or gravitas to what they are learning. Why are they actually learning what they are? So, it's not just learning diseases in isolation, like we used to. My thinking used to be, "Oh it's important they need to know these diseases to protect themselves in the future

and now at this age is the right time." And um.. so that was enough of a reason to teach it. But now I'm seeing, actually linked to a bigger idea the devastation these diseases can cause to the continent, to the country, to the society.

Interviewer And do you feel that inquiry-based learning allows for inclusion or does it allow for children with differences to participate?

Teacher I think it does because you know instead of them just sitting feeling frightened in their own bubble. If they are working with others. But I mean inquiry-based learning to me isn't always just group work. There are times when they are alone and then sometimes, we can intervene but if it's an assessment then, sometimes you can't. So that you see the true reflection of what the child's ability is.

Interviewer And so what have you seen as the benefits for those children of having in enquiry? Whether it involves group work or doesn't involve group work. What are the benefits that you've seen for the kids that..?

Teacher I think it might be that it's not just homed in on one small thing and then they are well I don't know that so therefore I can't move on. It's quite broad. So, they can somewhere grasp onto something that they understand.

Interviewer And your perception of the challenges that you've found with the girls who find learning challenging?

Teacher I think the challenge is always that they don't slip through the net. And if it group work they are not thinking, "Ahh well so-and- so will carry me." That's a problem.

Interviewer And working with resources how do you find?

Teacher Well sources actually giving them a source, they do struggle with the resources. One child did a whole comprehension about a ship sinking and the name of the ship was The Mary Celeste. And when I marked her comprehension, she thought The Mary Celeste was a person. So, then I realized the whole thing that she hadn't understood.

Interviewer What is your training and your experience of the training involve with inquiry-based learning? How did your school approach the training and how did you find the training? What training if any have you had?

Teacher So [name of person] started at our school and that was her, you know she introduced it to us and trained us. And initially she had a brilliant provocation on children working in chocolate plantations, and the coco plantations. So that sort of grasped all our interests quite quickly. Then we all, speak for everybody but it's myself. I started to struggle with actually how do I do it? And I think that if in the very beginning I'd been given a template, here's a template, this is how it works. Explained to me and this is how you work through it. I think I would have been a lot, we could have grasped it and run with it months and months ago.

Interviewer Do you think it's very different to the way you've been teaching already?

Teacher Um, no in the essence of it, in terms of; we are still teaching a lot of the same content because it's important and the children need to know. We can't just throw it out the window but what's good is we

forced to think about the, what's the word, not the importance or how necessary is it to teach it. Or is it just because it's in the syllabus and we always have. How necessary is it? How important is it? Does it fit in with the big picture? And also, the most important thing has been linking it to cross disciplinary concepts. So, then they are learning about concepts and then those concepts are covered in all the other subjects. So then when they hear the similar word used in the other subject. Then they say, "Oh ok, cause and effect, change, power." It gives them an understanding of that concept.

Interviewer What do you feel your biggest sort of take- away or your biggest sort of benefit take away that you've seen, since moving in this direction?

Teacher I think it's perhaps that I'm teaching with more meaning. I don't know how to explain that. Actually, analysing how important it is. Why do they need to know it? And what is it linked to? Is it worth teaching it at all? And I think, as I said, if we started off in an easier way, with a template and starting to go and that the template can be changed over time. But it was just initially for us, it was all over the show and changing and we don't know, and we need to go to this page of this book. We all just got lost. Anyway, and once the template came along suddenly everything fell into place, but it was months later. Sorry can I just go back; you asked a question about the children who struggle. Ya, it's I almost feel that maybe I haven't been doing it long enough to really assess how they are doing. Are they picking up on the concept of it or is this now actually making it worse for them?

Interviewer So, you've been…

Teacher It's not just little pockets of information

Interviewer Because you've been doing it for about a year now?

Teacher Mmm ya.

Interviewer Year and a half started this journey?

Teacher Ya, but only within the year and trying to adapt all the time so…

Interviewer Have you noticed anything with them? I know it's such a short period of time, but have you noticed any changes or difference in all the girls not just the girls who struggle? Or is it business as normal?

Teacher Mmm, I've just noticed that they've seen a connection between the different learning disciplines. They've picked that up and um no I don't know. I don't know yet.

Interviewer Do you think it reaches everybody? IBL?

Teacher I think it does but if the teacher is aware all the time not on its own. Only if the teacher is committed to ensuring it reaches everybody. Because you can't say that those children who struggle, now that we are doing IBL. They will be fine on their own. Because they won't. They still need to be guided and helped to read and helped to understand and..

Interviewer So, they still need the support in place?

Teacher Yes, and they still need to be and if you are breaking up topics. It's still really up to the teacher to structure it and if you are giving them different topics to make sure that there is less challenging than the others.

Interviewer And so, what changes do you have to make, if any to your unit of inquiry, to ensure that all the children are accommodated in that way?

Teacher You know, I think maybe it should be in our planning it should be in the template. Okay, so what are you going to do for those children? Sometimes you know you are planning, and the reality is sometimes you are now in class. Now to think about it quickly on the spot. I think it might have to be in your planning how, and not hectically, but how you are going to accommodate those children because sometimes you can think quickly on the spot in the classroom.

Interviewer So, it's like your perception, if I'm hearing correctly, please correct me if I'm wrong. Is that it's like any learning, it will accommodate all learners, but you still have to change and adapt and scaffold to make sure you accommodate all the learning needs?

Teacher You do exactly, you do.

Interviewer In itself it doesn't do that?

Teacher I don't think so, no, because you are extending so much. I think, I mean, I don't know if you need to know this but for the children who need extension it could quite easily come up through their.. and it doesn't need to be planned and scaffolded as much. Whereas your weaker children you've got to think, how am I going to accommodate them? In this situation they will find a challenge. What am I going to do? Um what might be good for them is perhaps there is less teacher standing talking. So, for those children who can't concentrate or who can't retain it. The audible or the word that they are hearing actually maybe for them it's better because they are working on their own making the notes, they are forced to.

Interviewer So, if you look at the lesson that you did, how do you feel that you reached the children that you are talking about?

Teacher So, I spoke to a colleague before my lesson and I asked how she was planning on doing it. And she was not planning on going through notes with them at all. Her plan was to just give them the work and they go on. But I felt they still needed that time of being talking through the notes with them, highlighting their notes, and then letting them go. And I'll be quite interested to see because now we are doing another assessment on that same topic but a more sort of traditional test where we give them symptoms of different diseases. Little case studies and they are the doctor and they must diagnose. And you know we give them some source material and pictures and say; What do you think that? What disease could come from this? And there is stagnant water there and that sort of thing. So we are going to do that assessment, so then I'm almost interested to see how my children do compared to hers, having had that ..

Interviewer structure

Teacher My feeling is that, mine might do better. I hope so, I might be wrong. But I felt they needed that. So, we'll see. So, they've got that to fall back on.

Interviewer But also, the way you stopped the lesson and wrote words on the board. That was also very good.

Teacher Oh ya. That's for when they were doing their research. I think if I hadn't given them those questions, they could have floundered and gone off completely. And the one thing is, you know when they do their research on the iPad, a lot of pictures come up, quite graphic. So maybe they are too young to see them, but they also get carried away by it. So, keeping them on track, "Okay this is what you are going to look for" and guiding them. I think that worked.

Interviewer And on reflection, would you change anything of what you did?

Teacher I might use Apple Classroom. I should have used it. So that I could monitor from my iPad if anyone happens to be not on task and was doing something they shouldn't have been doing on the iPad. But I thought, "Why didn't I do it?" and I thought because I could actually see that they were all so engaged and working. I think it would have triggered my memory to use it if I was, "What's this lot doing? What's that lot doing?" So, but I did think I should have used that. Um, what I also thought was good, was that this task compared to the previous task I gave them, because there was a huge improvement. Um, was that I gave them less time to work on their research. It was very structured and limited. It wasn't okay you know and then they were…and also you know um, I kept stressing to report in their own language. Because the first time they did presentations there was a lot of copy, paste and reading off the Internet. It was horrific but I was quite firm with them. I was harsh with all of them about it and um. They were all quite upset, and I gave them bad marks and so now I think they got a fright. And they are actually okay. But I also think it was because there was limited time. If they had thought, "Oh we can drag this out."

Interviewer They've got hours and ages.

Teacher Ya, it was time and they better find it and they all had their own roles, and it seemed fine.

Interviewer Were there any children that stuck out for you during the lesson that weren't able to participate for any reason?

Teacher Well there was one and she gets a lot of support at home from mom, from a tutor and she was a little bit disruptive in the lesson when they were doing their research and she was all. But I thought about it and I think it was, now she had to work alone, and she didn't know how to and she didn't like it. So, a way of getting attention to herself was to distract the others so she didn't have to do her work. So that was quite interesting but also knowing the situation at home. Maybe I'm wrong but that's what I thought. But actually no, she was the only one. It was one, it just was one luckily. It was one of those particularly nice lessons. Lucky you came for that one.

Interviewer I think the topic was particularly interesting as well.

Teacher Ya ya

Interviewer Not that I'm saying your other lessons wouldn't be, but it was interesting.

Teacher But I also think is that I've noticed with them, is that you can't drag the same topic on. You've got to keep bringing in something new and so don't drag the same thing out. Um ya.

Interviewer Have you got anything else as far as IBL as a whole that you feel you've noticed? Have you enjoyed it? Have you anything else you want to add about IBL as a whole learning experience?

Teacher Ya, I have enjoyed it and because and I do think there's, it's valid and I don't feel that it is a waste of time. I personally, I don't know why, I find this you know initially you do the provocation. I haven't come to grips with that yet. I see the importance of a good provocation because with [Teacher's name] that's what gripped us. So I see the importance and I've seen when it's worked. But I've also seen when it's a waste of time. And you put all this time and effort into it and actually, did they grasp the true meaning? Did they get it? And how much effort went into it and you can't get to clever and carried away. It's a fine line and I think.

Interviewer I just want to find out, what do you think the aim was in this lesson? What were you trying to achieve?

Teacher Um I wanted them. The big question was; What are the effects on Africa of these diseases? So, I wanted them to just think beyond the person being sick and I wanted them to think what would that do if we have a lot of ill people in a society? What does it do to the community? What does it do to the economy? How will it affect tourism? How will it affect the family structure? All of that sort of thing so I wanted them to see beyond the symptoms of a sickness.

Interviewer And then? Sorry I am jumping around. How do feel inquiry-based learning, how the kids experience it, do they enjoy it? How do they find it? Overall since you've been

Teacher I think they do, from my, in my subject. I think sometimes they have struggled in subjects where there is a lot of teachers involved and they are not too sure, when they don't feel secure. But is it here, is it there? Which teacher is it? What are we doing? They need to still have that structure, ya that's the only time that I've seen them sort of floundering.

Interviewer So, do you find that IBL can sometimes be a bit unstructured?

Teacher It can be because, I think there are a lot of teachers involved. You are not just working independently. So now it's to constantly find the time to chat to the other teachers, have a meeting, negotiate, check who's doing this, who's responsible for this. And then perhaps, how I decide to implement it is different to your way. Ya, so as teachers, you do need time to plan and you all need to all be on board. And then also the thing with that is that sometimes with IBL you yourself have your own particular interests and passions. Which you can't necessarily follow now because you've got to follow mine as well, you've got to fit in. You can't just teach what you wanted to teach, and I think that can sometimes be a bit hard for teachers. And maybe sometimes, ya its early days, teachers are teaching maybe something they don't quite understand themselves. It's not their passion or their interest. You know so because I'm suddenly doing a lot more history. So, then I didn't get a lot of guidance from the other teachers.

Interviewer Because you are more, your experience is more..?

Teacher Geography, Ya and the… I have to take a lot from the other teachers and if there is a presentation. They will do it and I must listen. You have to be very careful about what concepts you come with in the beginning, the transdisciplinary concepts because those are really your guidelines. And you know so sometimes you choose a concept just because you like the idea of it, and it doesn't work. It's quite hard but do you fit in your work, whatever subject you may be teaching. Do you fit that in around the concept or do you fit the concept around what you want to teach? So, choose your concept according to what you want to teach. Um which actually shouldn't be the case, so you've got to choose very carefully and think carefully. And then what I've also worked out, what I'm going to do, and I've done it sometimes, is write those concepts on the board at the start of the lesson because the children are just reading them, you don't need to mention them. But when you do mention them, they are there. And in their subconscious, they read them all the time and you are reminded to keep reverting back to that. So, let's say you've got 4 or 5 concepts, just write them, I've just written them.

Interviewer And how do you find, are you doing that currently or is that something you would want to do?

Teacher I did do that, I did it with Grade 7s

Interviewer How did you find the reaction from the girls?

Teacher They didn't comment on it but they them went to EMS and then they told the EMS teacher that the concepts were the same as the geography lesson. So, they had absorbed it.

Interviewer And then they can see the links?

Teacher Ya, so writing them, just writing those words. You don't even have to say I'm writing these because just write them and it reminds the teacher and the children. One problem can be the planning you can get a bit carried away in your planning. Oh, we can do this and that and make it so exciting and contribute. And actually, at the end of the day, what is the value in that? Does it need to be taught? You have accounted for something that actually on its own going to take 6 weeks. Never mind, and then the assessments that final, is it the summative assessment. I think that's meant to be sometimes, community-based, there actually isn't time for that. There isn't time you know. So, Grade 6s I see for two and a half hours a week. Grade 7s for one and a half hours a week. There's no time.

Interviewer So, you've got to be very careful with the planning so that you cover what you need to?

Teacher Ya ya and you've got to do your formative assessments, your summative.

Interviewer But I think what you said earlier about the time limits you place in class at so valuable. Like you said you had one inquiry-based, one lesson where you gave far more time and then this one time was far more restricted, and they were actually able to get the content done.

Teacher And that one, where I gave too much time, that was an inquiry-based lesson, but I just hadn't structured it enough.

Interviewer So, do you find the structure that you put in class is vital?

Teacher Yes, it is.

Interviewer For participation of everybody as well as the understanding and pacing of the lesson?

Teacher Yes, exactly for them and for us. But I think the main thing is with children who are struggling academically, you can't start thinking that they will be fine now this system will carry them along. You've got to have identified them and then monitor them.

Interviewer Because ...do you feel it's easier to slip through the cracks in inquiry-based learning than traditional teaching?

Teacher Ya because they can copy from the others, you know in a group work situation. The others push them, boost them. Um so ya so I'd think so. They not just sitting on their own and handing in a piece of paper with one or two answers on.

Interviewer But they actually are able to participate?

Teacher They are able to participate, and I think maybe that perhaps they might learn more. In this situation because they are not sitting there panicking and, I don't know what's going on? They are with their peers. Their peers will talk them through it or inadvertently guide them. Not that the peers are teaching them, they pick up easier from their peers perhaps through the understanding of using the same language than what their peers do. So I think in terms of learning they may learn more and maybe have less anxiety. And they will also be given and take maybe the slightly easier topic or side of the group work. Even without you allocating it because their peers know.

Interviewer Does the having a question like that allow for the children who would want to give more, to give more? And the children who are able to give less to give less?

Teacher It does, it does. What I find quite interesting was, so in the assessment there was one section which was really just talking about the disease and the other was answering the big question. They actually did better at answering the big question. I don't know why but they did. So, I think maybe because they were limited. So ya I think it's wonderful that you are doing this. We need to know, are those children more at risk? You know or less at risk? And what do we do because now it's a sudden change? What could be a problem though with a lot of group work is if someone has a facilitator? Does she sit there with the group? Does she only help that child? Does she help the whole group?

Interviewer Does she need to be there on that day?

Teacher Ya, should she be there? Or not? Um

Interviewer It's an interesting conversation.

Teacher How does that facilitator sit there, hear other group members going off track, not correcting them and guiding them? So, if she's fair, she helps them all but then that's also not fair on the other groups. So it

might be better if she doesn't sit with the group. She lets the child sit alone with the group, then the child can go back to her and say, "This is what I need to do." And then she helps her but not actually pull up a chair and join the group, especially the older or maybe in the beginning to get a feel for it.

Interviewer I think it also depends on the composition of your group because especially in a group work situation, there is something to be said for peer teaching. Which I think tends to happen in these situations.

Teacher Yes, ya.

Interviewer It is interesting, hey?

Teacher It is interesting.

Interviewer So, it would have to be tailored for classes. So, you wouldn't be able to include it on the planning as a whole grade?

Teacher Look and we all have children who have needs and need support. So, you could say okay now those children in this situation, they must do this or that. But then on the actual day, when you look at the reality of the situation. You've got to then make a call sometimes.

Interviewer And when you are doing group work, what about those children who prefer to work independently? Do find that they able to work in the group?

Teacher They don't like it but actually they have to do it and for me with kids who have gone for job interviews and who are working now, all their interviews were through group work and they were observed through one way glass and they were always put in group situations.

Interviewer So, it's almost a skill?

Teacher It's a skill you actually, too bad if you don't like it. My daughter hates it because she feels she knows more than the others. She was on a graduate program and then she ran the graduate program and she said you will notice how those people, even when they know they are being observed, in the the beginning they hold back, "We are all equal, it's all fair, I'm not bossy," and then they can't help themselves. Then they push and take over. You even have to… it's a skill you have to learn to hold your own and not be bossed around or to hold yourself back. So, I think they don't like it and it's horrible but it's actually not going to go away.

Interviewer Yes, and would you have to facilitate that, or not really?

Teacher Sometimes what the thing I often wonder about is so, should you then say, "Okay you're working on this aspect and I'm working on that aspect. Should I put my name on that slide or that screen? You put yours." And then the teacher can see well [name] didn't do much. So, but is that group work?

Interviewer Well is it? It is in a form isn't it?

Teacher It is in a way but if your slides come up in a presentation with beautiful thinking. But mine is… Do you mark individually? Or do you mark as a group?

Interviewer If you are working as a group for participation and you want everybody to participate, doing that. May that not be exclusionary? If you are having to put your name on a slide.

Teacher They also um, what did I want to say about it? Ya, they always want to know am I getting a mark on our own, an individual mark or is this a group mark? So maybe it is better if it's a group mark because then I'll help you and I'll guide you and I won't just let you struggle along. [learner's name], so she does struggle and then she put up her hand and answered a question. "Oh, that was ex… oh brilliant, yes, exactly now wa wa wa" and draw the others in to make, how good. And then she was just beaming and then you only need to do that once for that child and then she is actually caught the rules for this topic. "I know this I'm good at this." And to give them something that I can do this I'm fine.

Interviewer Thank you

Teacher Thank you

Interviewer Is there anything you want to add that we have not discussed?

Teacher No, but can I send you an email if I think of anything?

Later…..

Interviewer Tell me about the organisation of your groups.

Teacher The children have chosen their groups according to which disease to research. So there was a choice of 6. "Is there anyone thing that interests you, or that you would like to know more about? Ok come and write your name". And I think, we were trained in that we were taught that give them a choice and then they buy in.

Interviewer And that is because that's something they...

Teacher And the reality is that is that they a probably equally interested in them all or disinterested in them all. But the fact is that there was that choice.

Interviewer Ya a choice makes a big difference. And the fact that your grouping was not all the… it was heterogeneous. So, you had girls who were able to help the girls who were struggling. Or some of the context they might not have been familiar with so there were girls who might be more familiar the contexts of the...because they've had experience with it.

Teacher But what I was also trying to get across was with aids and I didn't want to go into too much detail. But just the … I was just trying to stress that being a drug addict and using drugs can give you aids. Because they are at that age now, I think if you tell and instil in them now at this young age. So

Interviewer In Grade 6 are they old enough?

Teacher They are old enough. I did try bypass the sex side of things.