

Intercultural communication in information systems development teams

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Dissertation submitted in partial fulfilment of the requirements for the degree *Master of Science
in Computer Science* at the Potchefstroom Campus of the North-West University

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November 2012

Preface and acknowledgement

This study report has in many ways been an immense challenge and a learning curve, and I am grateful to everybody who contributed, both officially and unofficially to make it a success.

I thank God for His love and strength. My most sincere thanks to my loving husband Solomon for his immeasurable support, and my children Mpho and Bonga, for their patience and understanding.

I would like to thank all my colleagues for their support especially Ncube Zenzo, Ausi Violet Mabalane and Nehemiah Mavetera, including former colleagues “Ntosh” Wayi and Motseothata Tsogang.

My sincere gratitude goes to the employees of the Information Systems and Computer Science department of the NWU (Potchefstroom campus) for their efforts, wonderful service and programmes that led to the successful completion of this dissertation.

I take this opportunity to pass my sincere thanks to Miss B. Setuke for her assistance with editing the dissertation.

My thanks also go to the employees and managers of companies that gave me the opportunity to conduct this study whose real names cannot be disclosed for the purpose of protection. Your humble participation is a great contribution to the knowledge of the intercultural communication in ISD teams in South Africa.

Lastly, but not least my sincere thanks go to Professor Roelien Goede who tirelessly devoted her time to guide and supervise me from the beginning to the end of this study.

DECLARATION

I, Moleboge Emma Nhlapo hereby declare that this mini-dissertation is my own original work, that all referenced sources have been accurately reported and acknowledged, and that this document has not previously, in its entirety or in part, been submitted to any university in order to obtain an academic qualification.

M. E. Nhlapo

November 2012

Abstract

Communication is a critical success factor to information systems development (ISD) projects. Intercultural communication involves two or more people from diverse cultures communication and using different worldviews and context transmit messages to each other. The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an ISD team. In order to achieve this aim one needs to understand information systems research and to justify the selection of the chosen research methodology; to understand information systems development and ISD teams; to understand culture and communication; to understand what affects communication has between different cultures; to discover how cultural misunderstandings impact upon ISD team performance and to discover the steps taken to eliminate miscommunication due to cultural issues in organizations.

The interpretive research was carried out in several organizations in Gauteng province of South Africa that develop or has a department that develops information systems. A multiple case study using interviews and content analysis as research methods were instrumental in coming to the conclusion of the research. A multicultural dyad conducted interviews in three participating organizations. Diverse information systems development team members participated in this study.

The results of the study describe how intercultural communication influences ISD teams in a South African environment. They also provide an understanding on culture and communication. The results of the study also report on culture and personality as determinants of behaviour, and also on different perceptions of culture. The different ISD team dynamics may be affected by team members' culture and personality. The results also report on intercultural communication in information systems development teams and how it is affected by the different cultural context.

Keywords: culture, communication, intercultural communication, information system development, information system development teams and performance.

Uittreksel

Kommunikasie is 'n kritiese sukses faktor in projekte om inligtingstelsels te ontwikkel. Interkulturele kommunikasie behels twee of meer mense van verskillende kulture wat verskillende wêreldbeskouings en kontekste gebruik om boodskappe aan mekaar te kommunikeer. Die doelwit van hierdie studie is om 'n goeie begrip van die invloed van interkulturele kommunikasie binne ontwikkelingspanne van inligtingstelsels te verkry. Om hierdie doelwit te bereik, moet 'n mens navorsing oor inligtingstelsels verstaan en die keuse van die aangewende navorsingmetode regverdig; die ontwikkeling van inligtingstelsels en ontwikkelingspanne vir inligtingstelsels verstaan; kultuur en kommunikasie verstaan; 'n begrip hê van watter faktore kommunikasie tussen verskillende kulture beïnvloed; ondersoek hoe kulturele misverstande die ontwikkelingspanne van inligtingstelsels se prestasie beïnvloed en die stappe bepaal wat geneem is om misverstande in kommunikasie as gevolg van kulturele kwessies uit te skakel.

Die interpretiewe navorsing is gedoen in drie organisasies in Gautengprovinsie in Suid-Afrika wat inligtingstelsels ontwikkel of 'n departement het wat inligtingstelsels ontwikkel. 'n Veelvoudige gevallestudie met onderhoude en data ontleding as navorsingmetodes is aangewend om tot gevolgtrekkings oor die navorsing te kom. 'n Multikulturele span het die onderhoude in die drie organisasies gevoer en multikulturele ontwikkelingspanne van inligtingstelsels het aan die navorsing deelgeneem.

Die resultate van die navorsing beskryf hoe interkulturele kommunikasie die ontwikkelingspanne van inligtingstelsels in 'n Suid-Afrikaanse konteks beïnvloed. Die resultate verskaf ook 'n begrip van kultuur en kommunikasie. Die navorsingsresultate bied ook insig in kultuur en persoonlikheid as bepalers van gedrag sowel as verskillende sieninge van kultuur. Die verskillende ontwikkelingspanne van inligtingstelsels mag deur die spanlede se kulture en persoonlikhede beïnvloed word. Die resultate dui verder aan hoe interkulturele kommunikasie in die ontwikkelingspanne van inligtingstelsels deur verskillende kulturele kontekste beïnvloed word.

Sleutelwoorde: kultuur, kommunikasie, interkulturele kommunikasie, inligtingstel ontwikkeling, inligtingstel ontwikkeling spanne en prestasie.

Contents

Contents	Page
Intercultural communication in information system development teams	i
Preface and acknowledgement	i
DECLARATION	ii
Abstract	iii
Uittreksel	iv
Contents	v
List of Tables	ix
List of Figures	x
List of Annexures	xi
CHAPTER 1: INTRODUCTION	1
1.1. Introduction	1
1.2 Background and problem statement	2
1.3 Motivation for study	3
1.4 Research aims and objectives	4
1.5 Method of investigation	5
1.5.1 Introduction of terminology	5
1.5.2 Research design	6
1.5.3 Ethical considerations	7
1.6 Structure of the dissertation	8
1.7 Chapter summary	9
CHAPTER 2: RESEARCH METHODOLOGY	12
2.1 Introduction	12
2.2 The research methodology	13
2.2.1 The conceptual framework	14
2.2.2 The research strategy	18
2.2.3 The study participants	20
2.2.4 The study tools and techniques	21
2.3 Research plan for this study	24
2.4 Chapter summary	27
CHAPTER 3: INFORMATION SYSTEMS DEVELOPMENT TEAMS	29
3.1 Introduction	29

Contents continued

3.2 Information systems	30
3.2.1 Definition of information systems	30
3.2.2 Information	31
3.2.3 The importance of information systems	32
3.2.4 Nature of information systems	33
3.3 Information system development	34
3.3.1 Definition of information systems development.....	34
3.3.2 Nature of information system development.....	34
3.3.3 Information system development approaches	36
3.3.4 Information system development methodologies.....	37
3.3.5 Information systems development environment.....	40
3.4 Information system development teams	41
3.4.1 Information system development team structure	42
3.4.2 Information systems development team dynamics	45
3.4.3 Team problems	53
3.4.4 Intercultural teams.....	55
3.5 Information system development team performance.....	56
3.5.1 Team performance climate	58
3.5.2 High performance teams.....	58
3.6 Chapter summary	59
CHAPTER 4: INTERCULTURAL COMMUNICATION IN INFORMATION SYSTEM	
DEVELOPMENT TEAMS	62
4.1 Introduction	62
4.2 What is culture?	64
4.2.1 Major components of culture.....	66
4.2.2 Culture theories.....	69
4.2.3 Cultural Contexts.....	71
4.2.4 Cultural diversity.....	71
4.2.5 Culture and information systems.....	72
4.3 What is communication?	74
4.3.1 Source and recipient	75
4.3.2 Context.....	75
4.3.3 Encoding and decoding messages	77
4.3.4 The message	78
4.3.5 Channel.....	78
4.3.6 Noise.....	79

Contents continued

- 4.3.7 Feedback and effect 80
- 4.4 Small-group communication 80
 - 4.4.1 Nature of small groups 80
 - 4.4.2 Complications of small group communication 81
 - 4.4.3 Research on small group communication 82
- 4.5 Intercultural communication 84
 - 4.5.1 Culture, communication and intercultural communication 85
 - 4.5.2 Barriers to intercultural communication 87
 - 4.5.3 Theories of intercultural communication 89
- 4.6 Intercultural communication in information system development 91
- 4.7 The importance of research into intercultural communication in information system development teams. 95
- 4.8 Chapter summary 96
- CHAPTER 5: IMPACT OF INTERCULTURAL COMMUNICATION IN INFORMATION SYSTEM DEVELOPMENT TEAMS: THE CASE STUDY AND RESULTS..... 99**
 - 5.1 Introduction..... 99
 - 5.2 The case studies 100
 - 5.2.1 Participating organizations 100
 - 5.2.2 Study participants 101
 - 5.2.3 Interview objectives 102
 - 5.2.4 Interview questions..... 103
 - 5.2.5 Preparation for the interview..... 106
 - 5.2.6 Conducting the interviews 106
 - 5.2.7 Documentation and evaluation of the interview 107
 - 5.3 Data analysis and interpretation..... 107
 - 5.3.1 What is the intercultural background of participants?..... 117
 - 5.3.2 What is culture?..... 122
 - 5.3.3 How is communication in different cultural contexts?..... 133
 - 5.3.4 What is the understanding on information systems development? 140
 - 5.3.5 What is the effect of intercultural communication on information system development team performance?..... 142
 - 5.3.6 What is the effect of intercultural communication on information system development team dynamics?..... 150
 - 5.3.7 What is the influence of the intercultural communication on the performance of an ISD team?..... 159
 - 5.4 Summary 159

Contents continued

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS.....	162
6.1 Introduction	162
6.2 Evaluating the case study research	163
6.2.1 The principle of hermeneutic cycle.....	163
6.2.2 The principle of contextualization.....	163
6.2.3 The principle of interaction between the researcher and the subjects	164
6.2.4 The principle of abstraction and generalization.....	165
6.2.5 The principle of dialogical reasoning.....	166
6.2.6 The principle of multiple interpretations	167
6.2.7 The principle of suspicion.....	167
6.3 Limitations.....	168
6.4 Conclusions	169
6.4.1 What is information systems research and justify research methods?	169
6.4.2 What is information systems development and information systems development team dynamics	171
6.4.3 What is culture?	172
6.4.4 What is communication?	173
6.4.5 How is communication affected by different cultural contexts?.....	173
6.4.6 How do cultural misunderstandings impact upon ISD team performance	174
6.4.7 What are the steps taken to eliminate miscommunication due to cultural issues in organizations?	175
6.5. Recommendations and future research	175
6.6 Chapter summary	176

List of Tables

- Table 1: Intercultural communication in ISD teams performance research map.....xii
- Table 2 - 1: Positivist, interpretive and critical social research paradigms 15
- Table 5 - 1: Participants’ race..... 101
- Table 5 - 2: participants’ gender..... 101
- Table 5 - 3: Participants’ religion 101
- Table 5 - 4: Participants’ age..... 101
- Table 5 - 5: Participants’ Job Description..... 101
- Table 5 - 6: Participants’ Home language 102
- Table 5 - 7: Participants personal characteristics matrix..... 102
- Table 5 - 8: Definitions of the sections of the interview questions..... 103
- Table 5 - 9: An excerpt from the ICC analysis excel table 109
- Table 5 - 10: An excerpt from appendix D..... 110
- Table 5 - 11: An excerpt for type 1 questions..... 111
- Table 5 - 12: An excerpt of type 2 questions..... 112
- Table 5 - 13: Another excerpt from type 2 questions. 112
- Table 5 - 14: Excerpts from type 3 questions..... 113
- Table 5 - 15: A corresponding excerpt for type 3 tables..... 114
- Table 5 - 16: An example of participants' answers..... 116
- Table 5 - 17: Cultural background of participants..... 117
- Table 5 - 18: Views on culture..... 123
- Table 5 - 19: Cultural context and team performance 127
- Table 5 - 20: Religious culture..... 131
- Table 5 - 21: Communication and culture 133
- Table 5 - 22: Information system development 140
- Table 5 - 23: Intercultural communication in information systems development teams 142
- Table 5 - 24: intercultural communication and information system development team dynamics 151

List of Figures

Figure 1: Summary of intercultural communication in ISD research.....	xiii
Figure 3 . 1: Intercultural communication in ISD teams.....	30
Figure 4 . 1: Intercultural communication in ISD teams.....	63
Figure 4 . 2: three levels of uniqueness in human mental programming .	65
Figure 4 . 3: Ten components of communication	74

List of Annexures

Annexure A: Interview questions.....A1
Annexure B : Letter requesting permission to conduct studyB1
Annexure D: Interview responses.....D1
BIBLIOGRAPHY.....180

CHAPTER	CHARACTERISTICS
1.	<p>Title: Introduction</p> <p>Purpose: This chapter introduces the research and outlines the research proposal.</p> <p>Actions: Discuss the problem, research main objective and secondary objectives.</p>
2.	<p>Title: Research methodology</p> <p>Purpose: To study and justify the application of the research methodology in detail.</p> <p>Actions: Differentiate between research paradigms, justify methods selected and select a research strategy for the stated research objectives.</p>
3.	<p>Title: Information systems development teams</p> <p>Purpose: Give background knowledge on ISD and ISD teams to gain understanding of ISD and the nature of intercultural ISD teams.</p> <p>Actions: Investigate current literature on information systems development using literature sources such as Google scholar, Scencedirect, Ebscohost, Emerald and libraries.</p>
4.	<p>Title: Intercultural communication in information system development teams</p> <p>Purpose: Review intercultural communication literature.</p> <p>Actions: Investigate current literature on intercultural communication using literature sources such as Google scholar, Scencedirect, Ebscohost, Emerald and libraries.</p>
5.	<p>Title: Impact of intercultural communication in information system development teams: the case study and results.</p> <p>Purpose: Presents the analysis and interpretation of research results to answer the research questions.</p> <p>Actions: Prepare for the interview, Develop interview questions, and observation checklist. Conduct the interviews. Use Atlas.ti to analyze the results. Apply content analysis on the data and interpret the results of the analysis.</p>
6.	<p>Title: Conclusions and recommendations</p> <p>Purpose: It presents the conclusions and recommendations for this study and further research.</p> <p>Actions: Evaluate case study, make recommendations and provide conclusion to the study.</p>

Table 1: Intercultural communication in ISD teams performance research map.

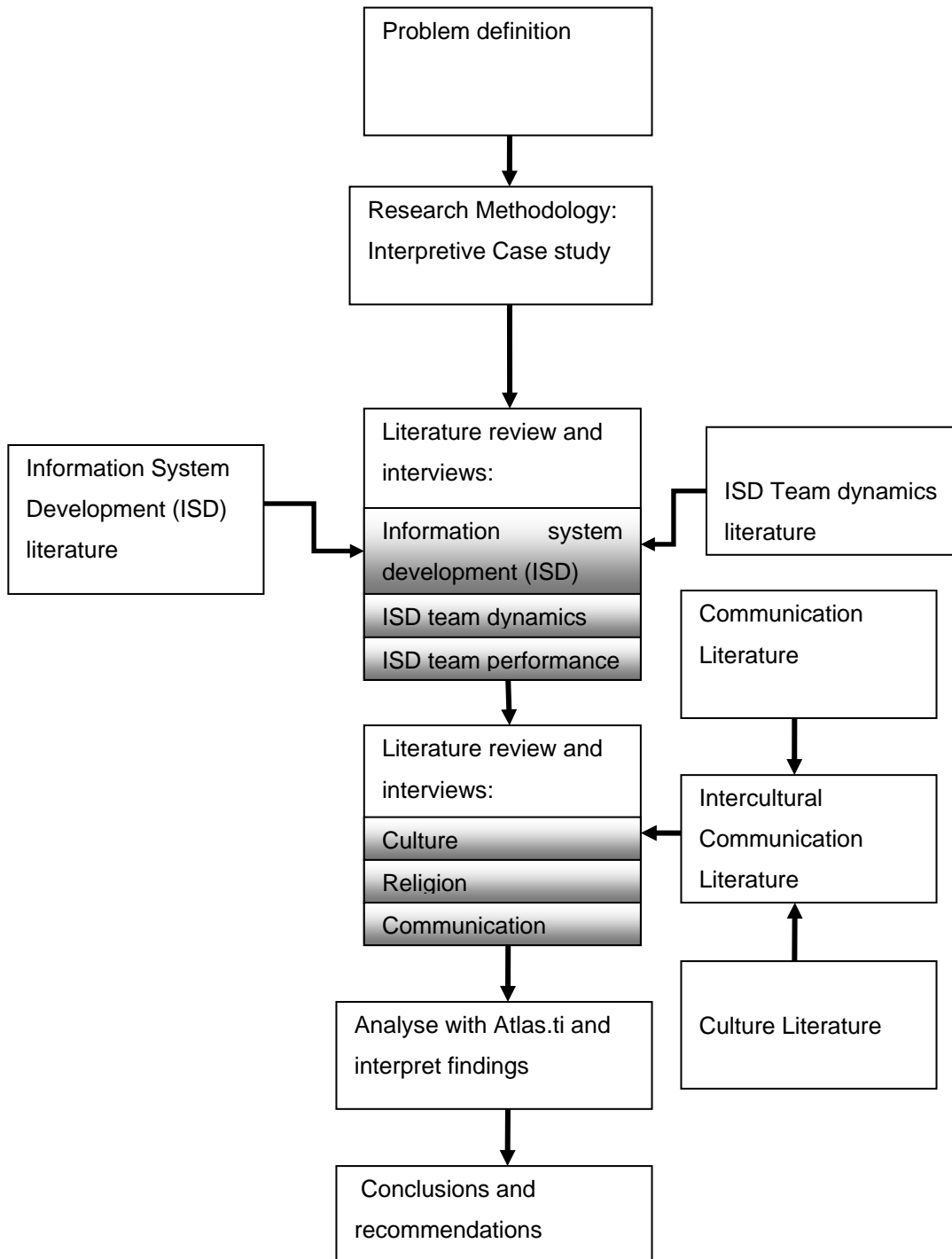


Figure 1: Summary of intercultural communication in ISD research

CHAPTER 1: INTRODUCTION

1.1. Introduction

This study aims to gain an understanding on the influence of the intercultural communication on the performance of an information system development (ISD) team. An ISD is one of the fastest growing industries in South Africa (SA). Intercultural issues are some of the challenges of any South African industry and government. According to Mbeki (2006), developing multicultural, multiethnic, multi-faith, multilingual communities is an immense challenge for many of our countries. The term cultural diversity is synonymous with multicultural, intercultural and culturally heterogeneous (Oetzel, 2005:352) and in this study the terms are used in this context.

Communication is one of the success factors in the development of information system projects. Experts agree that failure to communicate is the greatest threat to project success, especially information technology projects (Schwalbe, 2011:382). She has stated further that project communication is made more complex by geographic location and cultural background (Schwalbe, 2011:394). According to Avison and Fitzgerald (2006:11), people and organizational factors, rather than technical factors, have led to many information systems failures. People are the key success element in information systems development.

Intercultural communication happens whenever someone from a diverse culture conveys a message for processing by another person from a dissimilar culture (McDaniel, Samovar & Porter, 2012:8). The knowledge and the ability to utilize intercultural communication efficiently can assist to bridge cultural variations; alleviate problems and aid in attaining congruent and productive interactions (McDaniel *et al.*, 2012:8).

This chapter aims to show the necessity for research into intercultural communication in ISD teams. The chapter outlines the problem statement, the research aims and objectives, the method for investigation and chapter outline.

Section 1.2 presents the background of the research and explains the research problem. Section 1.3 provides motivation for the study. Section 1.4 outlines the research aims and objectives. Section 1.5 introduces the terms information systems development, team performance, culture, communication, intercultural communication and outlines the research design and the ethical considerations. Section 1.6 gives an overview of what to expect in the rest of the dissertation. Section 1.7 summarizes this chapter.

1.2 Background and problem statement

The South African laws and statutes of the last 16 years have given rise to multiculturalism in the workplace, e.g. Act 55 of 1998 (employment equity act), the Constitution: Bill of rights section 9 (right to equality). The Employment Equity Act (EEA) 55 of 1998 outlawed “all forms of unfair discrimination in the workplace and required all enterprises employing fifty or more employees to take affirmative action to bring about a representative spread of designated groups in all occupations and organizational levels within specified time periods” (Department of Trade and Industry, 2003:9). The strategy maintains that in the past mainly white men occupied most positions of power in organizations. The EEA measures aims to redress the imbalances caused by unfair discrimination against previously disadvantaged groups (blacks, women and people with disabilities) in terms of the employment opportunities so as to ensure a fair representation in all occupational categories and levels in the workplace (Ehlers, 2003:69).

The demographic changes have increased the probability that individuals work in cultural heterogeneous groups daily (Oetzel, 2005:351). Globalization has increased interaction of people from diverse cultural backgrounds (McDaniel *et al.*, 2012:4; Stair & Reynolds, 2012:34; Oetzel, 2005:351; Cox 1994). The South African society is categorized by many groups classified by themselves or others using specific identities (Grossberg, Struwig & Pillay, 2006:54). These categorizing identities have resulted in tensions in the South African society founded on “racial, ethnic, religious, gender, and linguistic groupings” (Grosberg *et al.*, 2006:54).

The challenges for culturally diverse teams are to communicate effectively so as to successfully complete ISD project results. Therefore, the study investigates how team members deal with intercultural communication so as to achieve project results. It investigates the influence of intercultural communication in multicultural ISD teams.

People have particular expectations of the results of their own behaviour as well as explanations of others' behaviour. According to Cushner and Brislin (1996:11), these expectations result from their own socialization, which disposes them to a worldview from a particular perspective. A worldview is central in any culture and it refers to any culture's philosophical view of God, man, nature and the universe (Fielding, 2006:480; Van Der Veur, 2003:80). It is the most essential aspect of culture and differentiates between cultures (Ishii, Klopt & Cooke, 2012:57). It is tacit in nature and implied by symbolism but it is not overtly expressed (Ishii *et al.*, 2012:58). Common reactions to this confrontation of past mental programming in the present include prejudice, stereotyping and discrimination (Cushner & Brislin, 1996:12). Acknowledging each culture's worldview leads to the achievement of a good

intercultural communication (Fielding, 2006:480). This study may show how team members strive to understand each other for the effectiveness of the ISD.

Successful intercultural communications occurs when team members are equals and experience each other's culture as equal (Fielding, 2006:478). Good intercultural communication is likely to succeed when people perceive themselves to be of equal status (Fielding, 2006:478). He (2006:479) states further that intercultural communication is risky because people may have to surrender strongly held ideas and change mindsets deemed important. Shifting people's mindsets and acknowledging the equality between cultures results in continuous learning in cultural competence (Chang, 2007:202).

The problem statement investigated in this dissertation can be summarised as: An intercultural communication environment exists in the workplace and since communication is vital to improve the success rate of ISD projects, it is worthwhile to investigate the effect of intercultural communication in ISD teams. If one is able to identify typical stumbling blocks in such teams one might be able to increase the success of these teams.

1.3 Motivation for study

The current research findings between heterogeneous and homogeneous group processes and outcomes have shown that (a.) culturally heterogeneous groups experience more group process problems than homogeneous groups, (b.) cultural diversity can benefit from group performance because of the combination of different ideas and different problem-solving approaches and (c.) diversity should be managed well to reap the benefits (Oetzel, 2005:352). There is still room for research in intercultural communication. According to Mbarika, Okoli, Byrd, & Datta (2005:132) the Sub-Saharan Africa [SSA] unique cultural, political, social, and economic arena presents fertile research grounds for expanding existing theoretical paradigms and at times new and different research frameworks.

The burgeoning research in intercultural workgroup communication has resulted in complex comprehension on how culture and cultural diversity impact on group communication process and performance (Oetzel, 2005:352). The research findings on intercultural teams (a) show that the potential for miscommunication rests with the inherent culture clashes between different stakeholders during ISD projects (Alsindi, Mayhew & Ahmed, 2004); (b) identified fundamental classes of cultural variations in multicultural ISD teams as team composition and teamwork for

both collocated and virtual teams (Olson & Olson, 2003:55). This study focuses on multicultural ISD team communication in the South African organisational context methods.

This study may be beneficial by assisting in the understanding of cultural diverse teams in a South African environment, given our legacy of separate development (*apartheid*) among cultural groupings. The study may also bring an understanding into the different cultural contexts and how they influence interaction among team members. It will be beneficial to anyone who employs a multicultural team because of the findings on intercultural communication among culturally diverse teams.

1.4 Research aims and objectives

The aims of this study are to examine how intercultural communication affects the performance of information system development (ISD) by multicultural teams. Three organizations were studied in the Gauteng Province of South Africa.

Main research aim

To gain an understanding on the influence of the intercultural communication on the performance of an ISD team.

Secondary research objectives

1. To understand information systems research and to justify the selection of the chosen research methodology;
2. To understand information systems development and information system development teams;
3. To understand culture;
4. To understand communication;
5. To understand what affects communication has between different cultures;
6. To discover how cultural misunderstandings impact upon ISD team performance and
7. To discover the steps taken to eliminate miscommunication due to cultural issues in organizations;

1.5 Method of investigation

This method of investigation explains the terminology of the research project, describes the methods to be utilized in the study as well as explain the ethical considerations to be employed.

1.5.1 Introduction of terminology

The preliminary review of literature starts by introducing the terms information systems development, team performance, culture, communication and intercultural communication and then highlight the importance of intercultural communication research.

Information system development is a way of conceiving, analyzing, designing, and implementing information systems (Avison & Fitzgerald, 2006:23). An information system is important for company survival against competition (Shelly & Rosenblatt, 2010:2).

Team performance in organizations is a crucial factor to the overall organizational performance (Senior, 1997:242). Research has shown that team cohesion, communication and coordination are all interconnected with team performance (Brannick, Roach & Salas, 1993:288).

Culture is a learned way of life that is passed on to group members (Jandt, 2004:8). Schein (1992:12) defines culture as “a pattern of shared basic assumptions that the group has learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems.” Cultural frameworks can be specified by national culture, job position, ethnicity, language, gender, age or disability (Oetzel, 2005:352). The use of the word culture by interculturalists, means different types of culture namely: national culture, corporate culture, professional culture (job position), gender, age, religious culture, regional culture and class culture (Gibson, 2002:8).

Gibson (2002:8) defines communication simply as the exchange of meaning. He also maintains that it involves conveying and receiving information between a sender and a recipient and this happens through words and non-verbal actions, such as gestures and facial expression (2000:11). Non-verbal communication is characterized by these categories: space (proxemics), kinesics (Body movements), chronemics (time), paralanguage (non-verbal elements of voice), silence, haptics (touch), clothing and physical appearance, territoriality, olfactics (smell) and oculusics (eyes and gaze) (McDaniel *et al.*, 2012:15; Jandt, 2004:129).

The organizational climate is the internal emotional temperament of the organization derived from how comfortable members feel with the organization and each other (Kreps, 1990:193). He further maintains that organizational climate influences and is influenced by the communication (1990:193). Powerful cultural bases and interpretive frameworks influence the organization members' opinions about how easy it is to communicate with other members of the organization (Kreps, 1990:196). This study may show how the stance of the organization towards intercultural communication affects ISD teams.

Intercultural communication generally refers to face-to-face communication among culturally diverse people (Jandt, 2004:39). It is important to conduct intercultural communication research because the chance of a misunderstanding between culturally diverse team members increases when the link between culture and communication is overlooked (Jandt, 2004:46). He maintains that unique communication problems for multicultural people result from culture shock, conflicting values, discrimination and using multiple languages (2004:462). Good intercultural communication is a negotiation of meaning, particularly when people interact face-to-face (Fielding, 2006:481).

1.5.2 Research design

Punch (2005:142) describes the research design as the overall plan for a section of research consisting of four main ideas: the strategy, the conceptual framework, the subject matter, and tools for data collection and analysis of empirical materials. The research design below outlines the strategy, the conceptual framework, the subject matter, and data collection and analysis tools.

The strategy to be employed in this study is the multiple case study: where the instrumental case study is extended to cover several cases (Punch, 2005:144). According to Punch (2005:144) a case study aims to understand the case in depth, and in its natural setting, recognizing its complexity and its context.

The interpretive paradigm is a conceptual framework chosen for this study because of the social nature of the problem and the exploratory nature of the problem. "The interpretive paradigm involves taking people's subjective experiences seriously as the essence of what is real for them (ontology), making sense of people's experiences by interacting with them and listening carefully to what they tell us (epistemology), and making use of qualitative research techniques

to collect analyze information” (Terre Blanche, Durrheim & Kelly, 2006:274). They also maintain that the interpretive approach focuses on harnessing and broadening the power of ordinary language and expression to help us understand our social world.

The research participants are ISD team members. The research will be conducted in ISD teams in organizations in the Gauteng Province, South Africa. These participants will be interviewed and their interactions observed.

The interpretive framework utilizes unstructured observation, open interviewing, ideographic descriptions and qualitative data analysis (Henning, Van Rensburg & Smit, 2004:20). The unstructured interviews and observations are the qualitative methods that will be implemented to collect primary data in this study.

The primary source of information is interviews. An interview is an approach to data collection where the researcher asks questions and gets responses from a sample or population personally (Coldwell & Herbst, 2004:37). A multicultural research team will conduct the interviews in Gauteng. The interviews will be recorded and transcribed and notes of the interview will be taken.

Content analysis will be used to analyze data. Qualitative content analysis entails the perusal of textual matter, recreation of texts into new non-positivistic narratives, whereby the analyst works within a hermeneutic cycle in which they subjectively participate (Krippendorf, 2004:17).

The software packages that are used in this study are Windows MovieMaker, Atlas.ti, Nero Soundtrax, Windows media player / Nero Showtime and Microsoft Office Word.

A description on the information systems research and the research strategy for this study is given in chapter 2.

1.5.3 Ethical considerations

When studying intercultural communication in Africa, it is crucial to be aware that African cultures are dynamic (Van der Veur, 2003:78). There must be a relationship of mutual trust between the researcher and participants and an understanding of what the researcher wishes to do with the research and its results. For these reasons, participants must be clearly briefed on what the research is, how it will be handled and what will become of the results.

The research is expected to improve the understanding of how ISD teams deal with intercultural communication towards successful ISD projects.

Since the study involves topics that some people feel uncomfortable discussing care was taken to create a safe environment – this was done by giving participants information about the study and by conducting the interview as informally as possible. People gave answers to questions in such a way that they would feel that their trust has been violated, if their responses are published. Care was taken not use direct quotes that could jeopardise the trust of the participants.

Since the groups were relatively small and individuals might be identified by their biographical information, it was decided to remove the participant codes in the representation of the data (given in appendix D) while keeping record of it for categorisation of the data. The names of the organizations have also been changed to A, B and C to minimize identification of the participants.

This data will be only used for this study and the original data will be destroyed after finalisation of this dissertation. The participants have been assured of the confidentiality of the interview process.

1.6 Structure of the dissertation

Chapter 1: Introduction

This chapter introduces the research and outlines the research process. It provides the problem statement, motivation for the study, research aims and objectives and it also provides a short introduction of terminology that explains all the major concepts of this study, a research design and ethical considerations.

Chapter 2: Research methodology

This chapter studies and justifies the application of the research methodology in detail. It also provides the context of the chosen research methodology in the field of research methodology. It addresses the first research objective: to understand information systems research and to justify the selection of the chosen research methodology.

Chapter 3: Information systems development teams

This chapter explains the major terms of the research: information system development (ISD), teams and performance especially ISD teams. It addresses the second research objective: to understand information systems development and information system development teams.

Chapter 4: Intercultural communication in information systems development teams

This chapter entails perusing the current literature to find other people's contribution to this study on intercultural communication, especially in ISD. It is essential to explain culture, communication, intercultural communication and the theories surrounding intercultural communication. The theories of culture and communication will be outlined and the important considerations of intercultural communication applied. This chapter addresses the third, fourth and fifth objectives of the study: to understand culture; to understand communication; and the effects of communication between different cultures.

Chapter 5: Impact of intercultural communication in ISD teams: the case study and results.

This chapter presents the interpretive research that will be done in three ISD teams from organizations in Gauteng, to answer the research questions. It also presents the results of the research that were obtained using content analysis. This chapter addresses all the research objectives by providing an understanding into information system development, information system development teams, culture, communication and what affects communication has between different cultures, it attempts to discover how cultural misunderstandings impact upon ISD team performance and what are the steps taken to eliminate miscommunication due to cultural issues in organizations.

Chapter 6: Conclusions and recommendations.

From Chapter 5 and taking into account the discussions on preceding chapters the recommendations of the study will be made. This is the concluding chapter of the dissertation. It summarises the study by reflecting on the objectives and how they were addressed in this study.

1.7 Chapter summary

Intercultural communication in ISD teams and how it affects team performance is worth studying. The topic of the study has been presented, the problem defined and the study aims and objectives defined. Any research that must be executed successfully requires a good plan of action. This chapter works as an initial plan for the entire research processes and explains

what and how the study aims to accomplish its objectives. The study will be conducted at an organization that has an ISD as a functional department and will use interviews and observation to capture how people perceive intercultural communication and its effects on the ISD teams' performance.

The next step is to chapter 2. Chapter 2 will describe and justify the research methodology in order to address the research objective.

CHAPTER 2: RESEARCH METHODOLOGY

2.1 Introduction

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an Information Systems Development (ISD) team. In order to achieve this aim one needs to understand information systems research and to justify the selection of the chosen research methodology. This chapter addresses this objective by devising a plan for this study and providing a complete description of all the methods and techniques that will be used in this study. It also explains and justifies the study methodology, the study strategy, the conceptual frameworks, the participants and the data collection and analysis techniques that will be applied in this study thoroughly.

Research methodology and standpoint guides all research (Clarke, 1997:64). Methodology is a logical approach to research which entails an apparent preference for particular methods and techniques in the framework of detailed ontological and epistemological suppositions (Mouton & Muller, 1998:2). The main research methodologies for social science in South Africa are quantitative, qualitative and participatory approaches (Mouton & Muller, 1998:11). The standpoint is an assumption stemming from the manner we learn and acquire knowledge, the environment of causality, ideas of change and accurate analysis units (Clarke, 1997:64). Researchers in the social sciences are guided and enlightened by methodological and theoretic ideologies in their processes of discovery (Clarke, 1997:64).

The difference between methodology and methods, as well as a distinction between the main methodologies applied in research are specified in section 2.2. This section then describes the three main research methodologies and then justifies the choice of the research methodology for this study. The following sections make a connection between the methodology and research design aspects and then describe in detail the research design outlining the strategy, the conceptual framework, the participants, and data collection and analysis tools is described.

Section 2.2.1 outlines the conceptual framework used in qualitative research and then justifies the use of the selected research paradigm. Section 2.2.2 describes the research strategies used in qualitative research and then justifies the use of the selected research strategy. Section 2.2.3 specifies the object of the study used in interpretive research and then describes the different sampling techniques used to select a sample for use in research. Section 2.2.4 outlines the data collection and analysis techniques used in interpretive research and in this study.

2.2 The research methodology

A research methodology is a logical approach to research that entails an articulate inclination for particular techniques and methods within the paradigm of a particular epistemological and ontological supposition (Mouton & Muller, 1998:2). This is the definition of methodology that will be applied in this study. According to Mouton & Muller (1998:2), methods and techniques refer to the actual apparatus employed in the performance of research by the social scientists whereas methodology refers to the fundamental logic or philosophy that are assumed in the utilization of these methods and techniques. The three main research methodologies are qualitative, quantitative and participatory action research (Mouton & Muller, 1998:2) and these are discussed below.

Quantitative research represents an alternative research methodology whereby the researcher gathers numeric data and applies statistical styles of data analysis (Durrheim, 2006:47). Quantitative research's construct is based on hypothesis, measurement using structured interviewing and questionnaires, generalization, causality, replication and focuses on the individual (Punch, 2005:238). The main research strategies for quantitative research are: experiments, correlational survey and quasi experiments (Punch, 2005:62). Quantitative research uses pre-specified research questions, compactly structured design and pre-defined data whereas qualitative research uses broad directing questions, freely structured design and data that is not pre-defined (Punch, 2005:23). Quantitative research is mostly applied in the positivistic conceptual framework discussed in section 2.3.1.1.

Qualitative research aims to study in intensity, sincerity and detail the behaviours of people in their surroundings, their thoughts and feelings, the way their surroundings appear, and the meaning of the symbols so as to categorize information that arises from data (Terre Blanche *et al.*, 2006:287; Durrheim, 2006:47). It involves the utilization of qualitative data, for instance interviews, documents, and participant observation to comprehend and explain social reality (Myers, 1997:241). Qualitative research like all other methodologies involves data collection and data analysis phases and is rooted in philosophical assumptions (Lacity & Janson, 1994:138). It gives emphasis to an interpretive paradigm that uses data to raise questions and also address research questions (Kaplan & Duchon, 1988:573). The interpretive paradigm is discussed in section 2.3.1.2

The methodology of participatory action research (PAR) became popular in the late sixties and early seventies (Mouton & Muller, 1998:15). The disparities between action research and participatory research have become trivial over the years hence participatory action research (Bhana, 2006:431). This methodology endeavours to generate knowledge in an active joint

venture with those involved in that knowledge for the sole purpose of civilizing their social, educational and material circumstances (Bhana, 2006:430). It has a critical and liberatory importance as it seeks to liberate the research participants (Mouton & Muller, 1998:15). Participation action research has insightful rationality reinforcing its practices and that is the supposition that intricate practical problems require specific solutions (Henning *et al.*, 2004:24).

Participation action research integrates social action and transformation as part of the research process (Walker, 1998:240). It seeks to alter and study discourse, practice and social organization (Walker, 1998:242). This methodology has significantly increased for IS research towards the turn of the 20th century and its philosophic substance is based in powerfully post-positivist suppositions like interpretive and ideographic research principles (Baskerville, 1999:2). It is mainly used in research in education and psychology in South Africa (Mouton & Muller, 1998:15). The research is mainly practical and then cognitive. It employs critical social theory paradigm (Mouton & Muller, 1998:15). The critical social theory paradigm is discussed in section 2.3.1.3.

The chosen methodology for this research is the qualitative methodology which has been guided by the research objectives and problem statement. Section 2.2.1 to section 2.2.4 will describe the research design components which are: the conceptual frameworks, the study strategy, the participants and then lastly tools and techniques for data collection and analysis; focussing on qualitative research design. The research design is the overall plan for a research or a section of research guided by four major ideas: the perspective framework, strategy, participants, as well as proper tools and techniques for data collection and analysis of empirical materials (Punch, 2009:112; Durrheim, 2006:37; Clarke, 1997:64).

2.2.1 The conceptual framework

A conceptual framework is the theoretical orientation of subjects under study and their relationships to one another (Punch, 2009:114; Miles & Huberman, 1994). A conceptual framework operates within ontology, epistemology and a methodology (Terre Blanche & Durrheim, 2006:6). The socio-technical comprehension of IS, has resulted in multiple approaches to IS research (Gonzalez & Dahanayake, 2007:845). The three main qualitative research conceptual frameworks used in information systems are positivism, interpretivism and critical social research (Klein & Myers, 1999:69). The conceptual frameworks are explained in detail below in section 2.2.1.1 up to section 2.2.1.1.

Table 2 - 1 gives a summary of the three paradigms by specifying their ontology, epistemology and methodology.

Table 2 - 1: Positivist, interpretive and critical social research paradigms (Adapted from Terre Blanche & Durrheim, 2006:6)

	Ontology	Epistemology	Methodology
Positivist	Stable external reality, law-like	Objective, detached observer	Experimental, quantitative, hypothesis testing
Interpretive	Internal reality of subjective, experience	Empathetic, observer, subjectivity	Interactional, interpretation, qualitative
Critical social theory	Socially constructed reality, discourse, power	Suspicious, political, observer constructing versions	Deconstruction, textual analysis, discourse analysis

2.2.1.1 Positivism

The philosophical stance of positivism is that the intention of knowledge is to describe, in some instances explain and also predict experienced phenomena (Henning *et al.*, 2004:17). Positivism is founded in empiricism and operates by causal laws (Henning *et al.*, 2004:17). Positivism is built in the belief that there is nothing non-experimental or transcendental (Fuchs, 2001:69). Positivism has a lot to do with the truth and verifying it through empirical resources. Positivists see science as a means to find the truth, to comprehend the world adequately so as to manage it by a process of prediction (Henning *et al.*, 2004:17).

Positivism “centers on experiment control, structured and replicable observation and measurement, quantification, generalization and objectivity” (Henning *et al.*, 2004:17) Positivism unites deductive approach with accurate quantitative data measurement hence researchers can discover and corroborate causal laws that will allow predictions about human actions (Punch, 2005:5). Scientific knowledge from positivism is held to be precise and as well as definite as opposed to prejudiced and controversial (Henning *et al.*, 2004:17). This paradigm ignores the way people create meaning and how culture affects meaning (Henning *et al.*, 2004:17).

2.2.1.2 Interpretivism

“The interpretive paradigm involves taking people’s subjective experiences seriously as the essence of what is real for them (ontology), making sense of people’s experiences by interacting with them and listening carefully to what they tell us (epistemology), and making use of qualitative research techniques to collect and analyze information” (Terre Blanche *et al.*, 2006:273). Interpretivism aims to capture the lives of the participants so as to comprehend and make sense of meaning (Henning *et al.*, 2004:19). The participants are the creators of meaning and the researcher is emphasized as the co-constructor of meaning (Gonzalez & Dahanayake, 2007:845). Researchers inquire into how social meaning is created in discourse and the manner in which these discourses are maintained. The interpretive framework focuses on harnessing and broadening the authority of regular language and expression to assist us comprehend our social world (Terre Blanche *et al.*, 2006:274).

Interpretivists believe that the objective of science is to uphold to the objective of being accurate about reality or manifold realities even if the objective is never achieved (Henning *et al.*, 2004:19). Interpretive study promotes diversity of data and diverse sources and analyses techniques so as to endeavour for validity (Henning *et al.*, 2004:19). Interpretivists maintain that no scientist can represent the world objectively because their preconceived notions or theoretical perspectives that strengthen their work people are flawed (Henning *et al.*, 2004:19).

Interpretivists insist that researchers have their own convictions, theoretical orientation and belong to a specific culture and therefore are not detached from their objects of study (Miles & Hubermann, 1994:8). Interpretivists maintain that researchers are affected by what they observe and hear during the research process, usually in an unobservable manner (Miles & Hubermann, 1994:8). The interpretive researcher’s desire to bridge the gap linking scientific and daily, sound reasoning, found out that observation is imperfect and erroneous and that all theory is re-workable (Henning *et al.*, 2004:19).

Information systems (IS) researchers can be aided by interpretive research to comprehend human thought and behaviour in organizational and social contexts (Klein & Myers, 1999:67). Interpretive knowledge is a mutual process, guided by participating researchers and examined and /or sanctioned by others (Henning *et al.*, 2004:20). Social contexts influence and cooperate with intellectual processes of interpretation utilized to comprehend phenomena and events (Henning *et al.*, 2004:20). Interpretative researcher studies how people create meaning in their lives and what meaning is created (Henning *et al.*, 2004:20). Klein & Myers, (1999:67) contends that interpretive research can facilitate the deep understanding of IS and IS development.

2.2.1.3 Critical social theory

The critical social theory (CST) framework is fundamentally the process of recreation of the world (Henning *et al.*, 2004:23). It challenges the political nature of the recreation process upholding that some relations in the world are more dominant than others (Henning *et al.*, 2004:23). It views people as intelligent participants who judge the straightforwardness, totality, authenticity, and circumstances of the messages received rather than inert containers of information delivered to them (Byrne, 2003:85). Its research aims at advancing critical awareness and demolishing the organizational structures and agreements that replicate domineering ideologies and the social disparities that are created, maintained and recreated by these social formations and ideologies (Henning *et al.*, 2004:23).

The critical social theory studies the processes of acquiring, sustaining and distributing present power relations (Henning *et al.*, 2004:23). This paradigm aims to reconstruct the world of participant; it disparages uneven power relations and endeavours to even the power relations (Henning *et al.*, 2004:23). Researchers seek to predict, understand and tackle social matters through their research (Henning *et al.*, 2004:23). The objective of this paradigm is to investigate the discourses and the way they materialize in participants' lives, with the intention of centring the discourses' power to mould people's lives (Henning *et al.*, 2004:23).

Critical social theory maintains that truth cannot be detached from domain standards or detached from the philosophical message (Henning *et al.*, 2004:23). Actions are implicit in social and economic perspectives highlighting the philosophical critique and praxis (Henning *et al.*, 2004:23). This paradigm's objective is to steer political emancipation (Henning *et al.*, 2004:24). The researcher in CST is responsible for developing the rational interpretations and comprehension of the social situation and it is criticized as suggestive of technical prudence in its effort to transform the world (Henning *et al.*, 2004:23). Methodological implications of CST are participation, cooperation, involvement and commitment (Henning *et al.*, 2004:24).

Information systems' (IS) research can be positivistic, interpretive or critical (Goede & de Villiers, 2003:208). Information systems research is deemed interpretive if acquiring an understanding of reality supposedly happens through societal constructions such as language, mutual understanding, perceptions, documents, apparatus, and other objects (Klein & Myers, 1999:69). Information systems research is categorized as critical if the major activity of the study is perceived as suited to social critique, whereby the confining and isolating circumstances of the current state are highlighted (Klein & Myers, 1999:69). Information systems research is categorized as positivistic when there is proof of formal propositions, quantifiable evaluation of

variables, hypothesis assessment, and utilizing a representative sample of the declared population to draw inferences concerning a phenomenon (Klein & Myers, 1999:69).

The interpretive paradigm is conceptual framework chosen for this study because the research seeks to understand the reality as experienced by heterogeneous ISD teams during their interactions.

2.2.2 The research strategy

The research strategy is the “set of ideas or rationale by which the study intends to proceed in order to answer its research questions” (Punch, 2009:113). The research strategy is the backbone of the research design since a logical rationale for responding to questions is essential for the research design (Punch, 2009:113). Some authors use the term research methods to describe the research strategy (Yin, 2009:8; Mouton & Muller, 1998:2). Other authors use the term research method to describe data collection techniques (Silverman, 2006:15; Strauss & Corbin, 1998:8). For the purposes of this study the term strategy refers to logical rationale for the study such as case study or survey whereas techniques will refer to actual apparatus used for data collection and analysis such as interviews, survey, statistical measurements, content analysis, etc.

The main research strategies for qualitative research are: case studies, ethnography and grounded theory and there frequently exists an overlap among these three research strategies (Durrheim, 2006:37; Punch, 2005:142).

The case study is the research strategy of scrutinizing one case using whatever methods that appears suitable with the aim of developing as full a comprehension of that case as is feasible (Punch, 2005:144). A case study’s objective is to understand the case intensely, in its natural surroundings, aware of its context and intricacy (Punch, 2009:114; Saunders, Lewis & Thornhill., 2003:93; Benbasat, Goldstein & Mead, 1987:372). Case study in information systems research allows the researcher to study information systems in its natural environment, learn about the condition of the IS, produce theory from practice and to comprehend the nature and intricacy of the processes occurring; and lastly a case study is an suitable way to investigate an area where few studies have been conducted (Benbasat *et al.*, 1987:370). It is an essential element in qualitative data (Lazar, Feng & Hochheiser, 2010:167).

A case study is characterized by restrictedness of the system (boundary between case and its context), subject of the case, preservation of the case's completeness, unity and reliability and the use of various data sources and various methods of data collection (Lazar *et al.*, 2010:144; Punch, 2009:114; Yin, 2009:18; Saunders *et al.*, 2003:93). Case studies are limited by potential problems with information validity, testing causal links is intricate and generalizations cannot be made from a single case study (Lindegger, 2006:461).

The three major types of case studies are the intrinsic, instrumental and multiple case studies (Punch, 2005:144). An intrinsic case study is a strategy whereby the researcher seeks to understand a specific case in depth (Punch, 2009:114). An instrumental case study spans wider by producing insights that extends beyond the current case (Lazar *et al.*, 2010:156). It is a research strategy whereby the researcher studies a case in detail to understand a specific issue or refine a theory (Punch, 2009:114). Multiple case study is a meaningful approach of researching existing theory, disputing existing theory as well as supplying a basis of new hypothesis (Lindegger, 2006:461; Saunders *et al.*, 2003:93; Benbasat *et al.*, 1987:373). It also allows for cross-case analysis and expansion of the existing theory (Benbasat *et al.*, 1987:373).

Ethnography embodies unfolding a culture and comprehending a lifestyle from the viewpoint of the participants (Punch, 2005:149). It is an intensive research into people's lives using explicit and clandestine participative methods to collect data (Punch, 2005:149; Saunders *et al.*, 2003:93). It is characterized by sensitivity to the significance of demeanours, actions, events and contexts as seen by the participants; the supposition that collective group cultural meanings are critical to comprehend its behaviour; studying the case in its natural environment; iterative and evolutionary study; eclectic techniques for data collection and protracted and iterative data collection (Punch, 2005:152).

Grounded theory means deriving a theory from data methodically collected and analysed through the study process (Strauss & Corbin, 1998:12). It is a research strategy for theory development (Lazar *et al.*, 2010:156). Grounded theory is a strategy for a study or as a data analysis technique (Punch, 2005:154) e.g. analysing data using grounded theory within a case study strategy. It is an open-minded study approach whose rationale is theory generation from data (Saunders *et al.*, 2003:93). It proposes no preconceived theory and formulation of hypothesis for testing before research (Punch, 2005:157). It commences with research questions followed by an iterative process of data collection and data analysis (Punch, 2005:158). It is used when there is inadequate theory on the elected research topic (Punch, 2005:159).

Quantitative research utilizes quasi-experiments, experiments and correlational survey as the main research strategies (Punch, 2005:62). An experiment entails the use of independent variables and indiscriminate allocation of covariates (Punch, 2005:73). The use of experiment is unsuitable for social research because it is restricted by expediency and ethics (Punch, 2005:82). The survey entails the use of a standard set of questions, in the researcher's chosen language to which the participants reply by selecting the most relevant answer from the predetermined answers (Henning *et al.*, 2003:32). Survey research strategy is designed to achieve particular contrasts (Punch, 2005:64). This study concentrates on the qualitative research methods because of the nature of the research objective, aims and problem statement.

A case study can be positivistic, interpretivistic or critical (Klein & Myers, 1999:69). The interpretive case study is the employed research strategy because we seek to understand the phenomena in detail.

2.2.3 The study participants

The participants are the creators of meaning and the researcher is emphasized as the co-creator of meaning (Gonzalez & Dahanayake, 2007:845). Participant selection will be used to select the participants of the study.

There are three main types of participant selection that are used in a study: convenience participant selection, random participant selection and purposive participant selection (Durrheim, 2006:50). Convenience participant selection is used in experiments and it involves choosing available participants without prior rationalizing (Durrheim, 2006:50). In random participant selection every participant in the population has equal probability of being chosen and it is used in surveys because it is the representative sample to generalize (Durrheim, 2006:50). In the purposive participant selection participants are chosen for theoretical reasons (e.g. selecting persons who have experienced multicultural ISD team membership and representing different cultures) and this type of participant selection is utilized in qualitative research (Durrheim, 2006:50).

2.2.4 The study tools and techniques

This section of the study outlines data collection and the analysis tools and techniques. Study tools and techniques for data collection and analysis describe “what will be used to collect and analyse data” (Punch, 2009:114).

2.2.4.1 Data gathering

Qualitative research tools and techniques that have a long tradition in South Africa are ethnographic studies, in depth interviewing techniques, participant observation and the use of documentary sources (Punch, 2009:114; Mouton & Muller, 1998:13) and these are used in case studies as well (Yin, 2009:11). Methodological implication of interpretivistic paradigm is unstructured observation, open interviewing, ideographic descriptions and qualitative data analysis (Henning *et al.*, 2004:20). Unstructured interviews are the qualitative method that will be implemented to collect primary data in this study.

An interview is an approach to data collection whereby the researcher asks questions and gets responses from a sample or population personally (Coldwell & Herbst, 2004:37). The interview is the mostly used format in qualitative data gathering and it is also inexpensive and not time consuming (Silverman, 2006). Coldwell and Herbst (2004:37) defines observation study as a monitoring approach to collecting data where the researcher inspects the activities of the subject or the nature of some material without asking anyone any questions. Ideographic descriptions are a subjective way of comprehending how people make sense of their circumstances (Cronje, 2006). The study results of ideographic descriptions are only applicable to the study participants, i.e. they cannot be generalized to the entire population (Sells, Smith & Newfield, 1997:169)

2.2.4.2 Data analysis

Qualitative data analysis is the process of studying a matter and its components so as to establish its dimensions and properties, then making inferences about the entire matter utilising the obtained knowledge (Corbin & Strauss, 2008:45).

There are many qualitative research techniques for data analysis as outlined by Tesch (1990:36) which are dependent on the objectives of the study. Miles & Huberman, (1994:7) outline transcendental realism, ethnographic content analysis, event structure analysis, ecological psychology and grounded theory as the data analysis methods utilized in qualitative research for research that aims to discover regularities using identification. Krippendorf (2004:16) includes the following data analysis techniques in qualitative research: discourse analysis, social constructivist analysis, rhetorical analysis, conversation analysis and qualitative content analysis. Other qualitative data analysis techniques include narrative analysis and semiotics. The ensuing discussion will describe qualitative data analysis techniques as follows: transcendental realism, content analysis (both qualitative content analysis and ethnographic content analysis), semiotics, event structure analysis, ecological psychology, grounded theory, discourse analysis, social constructivist, rhetorical analysis and conversation analysis.

Transcendental realism has three main components: data reduction, data display and drawing and verifying conclusions (Punch, 2005:197). Data reduction occurs through editing, segmenting and summarizing data, coding, memoing and development of abstracts concepts (Punch, 2005:198). Data display organize, compress and assemble information and it is achieved through the use of charts, graphs, networks and diagrams and in any way that advances data analysis (Punch, 2005:198). Drawing inferences and conclusions involves developing and verifying propositions (Punch, 2005:199).

Content analysis is a research technique for creating repeatable and legitimate conclusions inferences from texts or other significant material within a specific context (Krippendorf, 2004:18). It is an extensive data analysis technique that investigates theoretical interpretation that might create new knowledge (Lazar *et al.*, 2010:285). Krippendorf (2004:17) asserts that there are two types of content analysis when analyzing qualitative data and those are qualitative content analysis and ethnographic content analysis.

Qualitative content analysis entails perusal of textual matter, recreation of texts into new non-positivistic narratives, whereby the analyst works within a hermeneutic cycle in which they subjectively participates (Krippendorf, 2004:17). In qualitative content analysis, textual matter is perused so as to create categories and calculate the number of occurrences of the categories in a particular text (Silverman, 2006:158).

Ethnographic content analysis encourages the surfacing of content analysis from texts by working with categories and narrative accounts but concentrating on circumstances, backgrounds, style, images, meanings and subtleties supposedly identifiable by participants involved (Krippendorf, 2004:16).

Semiotics seeks to elucidate the whole intricacy of textual meaning and the feat of reading texts, but has no basis for meticulous generalization in the conventional logic (Slater, 1998:234). Content analysis and semiotics are the two textual data analysis techniques that establish invariable techniques in interpretation of culture (Slater, 1998:234). They are founded in methodological controls which, allow other researchers to reproduce or challenge the results and permit comparability and generalization of the results (Slater, 1998:233).

Event structure analysis permeates a narrative with greater thoroughness and clarity to generate reproducible and generalizable contributory analysis of events (Griffin, 1993:1094).

Ecological psychology is the process of studying about persons in their normal surroundings (Tesch, 1990:37).

Grounded theory analysis aims at producing abstract theory to explain central issues in the data (Punch, 2005:204). It is accomplished in three steps: open coding, axial coding, and selective coding (Punch, 2005:205). Open coding is the process of discerning abstract concepts in the data and specifying their properties and functions (Corbin & Strauss, 2008:195; Punch, 2005:212); Axial coding is the process of establishing relationships between abstract concepts in the data (Corbin & Strauss, 2008:195; Punch, 2005:212); while selective coding is the process of categorizing and cultivating the theory (Goede & de Villiers, 2003:212).

Discourse analysis systematically peruses texts focusing on how certain observable facts are embodied to comprehend how reality is constructed in human relations and in language at both personal and societal level (Wooffitt, 2008:445; Krippendorf, 2004:16). It has several variants and these include discursive psychology, Foucauldian discourse analysis and critical discourse analysis (Wooffitt, 2008:445).

Social constructivist analysis focuses on discourse as well, but so as to criticize misrepresentation (Krippendorf, 2004:16).

Rhetorical analysis focuses the delivery of messages especially the deliberate or actual effects, which means the researchers depend on identifying building “elements, tropes, augmentation style and speech acts” (Krippendorf, 2004:16).

Conversation analysis involves analyzing transcripts as records of conversational interactions to create a shared construction of conversations (Krippendorf, 2004:16). It is one of the finest

approaches to the study of language use and is significant to the investigation of naturally occurring social interaction (Wooffitt, 2008:443).

2.3 Research plan for this study

The selected methodology for this study is the qualitative methodology. This study does not predefine variables and is not emancipatory; it seeks to comprehend experiences of participants in ISD team setting. Due to the questions, aims and objectives of the study, qualitative methodology is more relevant to address these. The study does not have predefined variables that can be measured and it seeks to understand a phenomenon in depth therefore statistical measurement will not be relevant. Participation action research is also irrelevant because we do not seek to change anything but we seek a deep understanding.

The interpretive paradigm is the conceptual framework chosen for this study because the study seeks to understand the reality as experienced by heterogeneous ISD teams during their interactions. The interpretive paradigm allows the researchers to investigate and ask in-depth questions so that they can understand what is going on.

The strategy to be employed in this study is an interpretive multiple case study: where the instrumental case study is extended to cover several cases (Punch, 2005:144) to increase validity of the results. The research deals with intercultural communication in ISD teams and the resources do not permit a full ethnographic study. The research may produce theory verification or theory generation hence grounded theory may not be relevant. A multiple case study will allow the researchers to question in depth the phenomenon so that they can answer the study questions. This will also allow the researchers to compare across companies to comprehend how they deal with intercultural communication. The South African situation of trying to forge a new identity also gives opportunity to investigate a situation which has not been researched a lot.

Purposive participant selection is the chosen technique for selecting participants in this study. It is perfectly suited for this study as it allows the qualitative researcher to select a pre-defined sample because it meet a specified criterion. This study seeks to investigate intercultural communication therefore it requires intercultural participants. The study participants are ISD team members from diverse organizations in Gauteng. The study will be conducted in information system development teams in organizations in the Gauteng Province, South Africa.

A letter has been written (see Appendix A) to the managers of participating organizations requesting participants of the study that have cultural, religious, gender and racial diversity.

This study will use the interviews as a method of data gathering because it seeks to understand what the participants feel and think. The primary source of information in this research is interviews. A multicultural research team will conduct the interviews in Gauteng. The participants are from different worldviews and as such the study seeks to understand how their culture, which is socially constructed, is different those different contexts. The interviews will be recorded and transcribed and notes of the interview will be taken.

Qualitative content analysis is a chosen method of data gathering since it will enable us to analyse data in a format that is reliable and valid, even though it's not positivistic. Content analysis focuses on the reliability of its measures and to the validity of the findings (Silverman, 2006:159). Klein & Myers's seven principles for evaluating will also be followed when interpreting the data in this study.

Myers and Klein (1999:72) outline the 7 principles that can be used to evaluate interpretive case study and ethnography. These principles are as follows:

The principle of hermeneutic cycle, purport that repetition among interdependent meaning of components and their whole facilitates human comprehension (Klein & Myers, 1999:72).

In this principle, the individual's complete set of questions and specific answers will be looked at in order to understand a person's view on culture. The individual participant's responses in a specific environment will be compared to that or other participants to better understand the specific participant's responses.

The principle of contextualization needs "critical reflection of the social and historical background of the research environment", so that the audience can perceive how the prevailing conditions being researched emerged (Klein & Myers, 1999:72).

This principle will be implemented in analysis by evaluating the answers to questions on the background of the organization and of the individual, i.e. participants' own personal and work experiences in multiculturalism.

The principle of interaction between the researcher and the subjects needs critical evidence on how social constructions of data occurred through the interaction between the participants and the researchers (Klein & Myers, 1999:72).

This principle will outline the methods of data collection and data analysis that were used to develop the findings of the research. A multicultural women dyad will be conducting the research using ideographic interviews and record the conversations.

The principle of abstraction and generalization necessitates recounting idiographic details in data interpretation by applying principle 1 & 2 to theoretical and common concepts describing the nature of human comprehension and social action (Klein & Myers, 1999:72).

Content analysis will be used to analyse the data. The transcribed textual data will be analyzed and the codes that have been created will be produced here. The analysis process is an iterative process and will further be explained in chapter 5.

The principle of dialogical reasoning needs discernment to probable inconsistencies “between theoretical presumptions guiding the research design and the actual findings” (Klein & Myers, 1999:72).

The researcher’s expectations based on the literature matched against the actual findings of the research. More on this will be reported in chapter 5.

The principle of multiple interpretations needs discernment to probable differences in interpretations amid participants as told in numerous narratives of the same events sequence under investigation (Klein & Myers, 1999:72).

The different accounts as told by different participants of the same phenomena will be investigated in detail and reported on in chapter 5.

The principle of suspicion needs perceptiveness to probable narrative partialities and narrative methodical alterations by participants (Klein & Myers, 1999:72).

This principle will evaluate the biases of the data and data collection process. More on this will be reported in chapter 5

The software packages that are used in this study are Windows MovieMaker, Atlas.ti, Nero Soundtrax, Windows media player / Nero Showtime and Microsoft Office Word. Windows MovieMaker and Nero Soundtrax are used when recording the interviews, Windows media player / Nero Showtime and Microsoft Office Word are used when transcribing the interviews. Atlas.ti will be used when analyzing data. It is also important to make sure that the computers that are used have the latest version of good quality Anti-Virus software to be protected against a majority of security threats. It is also a good practice to make regular backups of the study work to ensure further protection against computer failure.

2.4 Chapter summary

Any work that is carried out needs a proper plan to succeed. This chapter serves as a plan for this study and gives a step-by-step description of the study methodology and design that will be used in this study. A research methodology provides the philosophy of the study and a research design provides a plan for the study. A comprehensive study design links the research questions and the data and places the researcher in the empirical world (Punch 2009:112). A good research design must outline the conceptual framework (theoretical underpinning), strategy (logical rationale or set of ideas for answering questions), participants (who or what of the study) and tools and techniques (how or with what).

This chapter has explained in detail the research methodology, the conceptual frameworks, the research strategy, the participants and the data collection and analysis techniques that will be employed by this study. The chapter has also justified the choice of methodology and the research design. The methodology for this study is the qualitative study which will be achieved by using an interpretive case study and employing interview as a data collection technique, content analysis as a data analysis technique, and principles for interpretive case study research in information systems, on 15 diverse employees from 3 South African organizations situated in Gauteng province.

The next chapter is a literature review and explains information systems and discusses the important dynamics of information systems' team development and team performance. The chapter explains the major terms of the research: information system development (ISD), teams and performance especially ISD teams. It also addresses the second research objective: to understand information systems development and information system development teams.

CHAPTER 3: INFORMATION SYSTEMS DEVELOPMENT TEAMS

3.1 Introduction

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. In order to achieve this aim one needs to understand information systems development and information systems development teams. This chapter addresses the study objective by providing a theoretical framework for information systems development. It defines the concepts of information systems, information systems development, ISD teams and ISD team performance. It also discusses the current contributions of other researchers into relevant aspects of this study topic.

Business information systems are utilized in all functional areas of today's businesses (Stair & Reynolds, 2012:506). Information system development (ISD) is a way of conceiving, analyzing, designing, and implementing information systems (Avison & Fitzgerald, 2006:23). It is the process of constructing new or altering existing systems starting with identification of problems or opportunities to exploit to the implementation and refinement of the chosen solution (Stair & Reynolds, 2012:506). Effective ISD requires a team effort from all relevant stakeholders and starts with careful planning (Stair & Reynolds, 2012:506).

Section 3.2 defines information systems and its concepts and then outlines its importance to organizations. Section 3.3 defines information system development (ISD). It also outlines the importance of ISD and describes different components of ISD. Section 3.4 describes the different types of ISD teams and outlines the ISD team's dynamics. This section also describes some of the research that has been performed on ISD teams. Section 3.5 describes ISD team performance and the performance measures used in ISD. It also outlines the research that has been done on ISD team performance.

Figure 3 . 1 shows the structure of the literature review. The study topic brings together four knowledge areas: culture, communication, ISD and team dynamics. The literature review is divided into two chapters, chapter 3 and 4. The shaded parts of figure 3 . 1, information system development and team dynamics, show the contribution of this chapter to literature review.

Chapter 4 concludes the literature review by dealing with the rest of the topics and combining all the four knowledge areas.

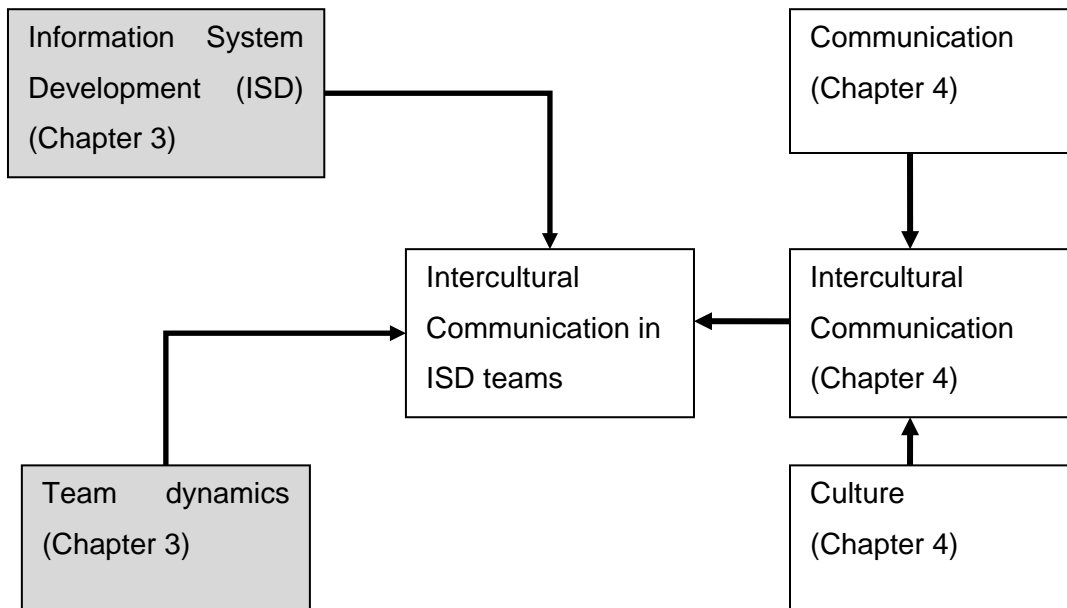


Figure 3 . 1: Intercultural communication in ISD teams

3.2 Information systems

To understand information systems it is essential to define information, information systems, its importance and nature. This section assists by defining information and information systems and describing the importance and nature of information systems.

3.2.1 Definition of information systems

An information system is a set of interconnected components that gather, manipulate, and distribute data and information, and grant a feedback mechanism to satisfy an objective (Stair & Reynolds, 2012:4). Oz (2009:13) defines an information system as a collection of all elements that collaborate to manipulate data and generate information.

Information systems are found in all organizations in many forms: informal information systems, formalized information systems, manual information systems and computer-based information systems (Avison & Fitzgerald, 2006:3). Informal information systems have a propensity to be

more instinctive and qualitative in character and these could include grapevine and business lunches whereas formalized information systems are required by organizations to produce information regularly and in a prescribed format (Avison & Fitzgerald, 2006:3).

The word information system has become tantamount to computer-based information system (CBIS) although IS can be manual or computerized (Oz, 2009:14). Manual systems are time-consuming and incapable of dealing with large amounts of data (Avison & Fitzgerald, 2006:3). In this study the term information system is used synonymously with CBIS. A CBIS is an information system that utilizes a computer to manipulate data, promptly, accurately and produce complete information when and where required, which is the approved level of details, so that it constructively contributes to a particular purpose (Avison & Fitzgerald, 2006:3).

A CBIS consists of organized components that gather, manipulate, store and distribute data and information, and these components are hardware, people, software, databases, procedures and telecommunications (Stair & Reynolds, 2012:12; Oz, 2009:15). Basic data might comprise pictures, graphics, video, sound, text and alphanumeric data which are processed into information by a computer through the production of reports, pictures, graphics or addressing management queries (Stair & Reynolds, 2012:6; Avison & Fitzgerald, 2006:4). A CBIS is not entirely computerized as it may comprise some manual tasks e.g. clerks capturing data (Avison & Fitzgerald, 2006:4).

3.2.2 Information

An IS utilizes data, process and communication fundamentals and technologies that must satisfy diverse stakeholders (Bentley & Whitten, 2007:68). Information systems in an organization produce processes and useful information that helps in the effective functioning of the organization, to members and clients (Avison & Fitzgerald, 2006:3). Information is a collection of facts in a manner that it adds supplementary value exceeding the facts themselves (Stair & Reynolds, 2012:5). Information is processed data that is meaningful within a context (Oz, 2009:9). Processing data into useful information requires knowledge, which is the comprehension and consciousness of a set of information and methods of making information useful to achieve a particular task or make a decision (Stair & Reynolds, 2012:6).

Useful information must be relevant, complete, accurate, timely, cost-effective, accessible, verifiable, simple, secure, and reliable (Stair & Reynolds, 2012:7). Useful information is important to organization because it is utilized to solve problems and make decisions (Oz,

2009:8). The collection of useful information, must aid organizations to achieve its goals and objectives, e.g. increasing profits, reducing costs, improved security or enhanced performance (Stair & Reynolds, 2012:8). The information may be regarding its clientele, suppliers, goods and products, equipment, procedures, business operations, and so on (Avison & Fitzgerald, 2006:3).

3.2.3 The importance of information systems

One of the information system's most imperative roles to the sound operations of an organization is the computerization of information exchange amongst business systems (Oz, 2009:13). Information systems might help the organization to deliver increased efficiency on its operations and effectiveness as a result of better managerial decisions (Avison & Fitzgerald, 2006:4). Information systems are utilized in almost all industries, and in all functional areas and working divisions of business e.g. accounting, sales and marketing, manufacturing, etc. (Stair & Reynolds, 2012:4). Automated IS can assist to supply a communications system, decision support systems, databases and "organizational memories" through groupware (Iles & Hayers, 1997:103).

An amalgamation of information systems that provide support to a variety of business functions are used to serve most organizations (Bentley & Whitten, 2007:44). Most businesses encompass both front-office systems back-office systems, which provide data for management information systems (MIS) and decision support systems (DSS) that supports managerial decision making (Bentley & Whitten, 2007:44). Front-office systems sustain business functions that provides services to customers and these includes enterprise resource planning (ERP) systems that perform marketing and sales functions, transaction processing systems, and customer relationship management systems (Bentley & Whitten, 2007:45). Back-office systems sustain internal business functions and these include ERPs that perform human resources, financial, manufacturing and inventory functions and supply chain management systems (Bentley & Whitten, 2007:44).

Most companies spend lots of money on information systems so as to computerize their processes, gain competitive advantage and enhance decision making (Avison & Fitzgerald, 2006:4; Akmanligil & Palvia, 2004:45). The IS technology advances have increased the speed at which new products are created and introduced to the market (Lepine, 2008:27). Improved globalization and advancements in information and communications technologies have enhanced technological transfer and cut down the lifecycles of products even further (Lepine,

2008:27). An information system is important for company survival against competition (Shelly & Rosenblatt, 2010:2). To maintain competitive edge in a technological advancement era, organizations must often alter their products and processes (Lepine, 2008:27).

Information systems impacts on the strategic, operational levels and the human aspects of the organization (Walters, Broady & Hartley, 1994:5). Organizations require information systems to analyze the business as well as its environment and plan and ensure that it attains its goals (Avison & Fitzgerald, 2006:4). These goals possibly will be related to profitability, service delivery, long-lasting survival, better market share, growth, customer satisfaction, and employee satisfaction (Avison & Fitzgerald, 2006:4).

An information system is created to meet the objectives of all forms of organizations and people and their use is distributed throughout the globe to progress the people's lives and business activities (Stair & Reynolds, 2012:30). Modern IS links organizations with its customers and suppliers through the use of e-commerce technology, customer relationship management, and supply chain management (Bentley & Whitten, 2007:45). Effective IS enables an organization to maintain its business processes, implement the mission and service diverse stakeholders (Shelly & Rosenblatt, 2010:77).

3.2.4 Nature of information systems

Information systems results in influential external forces for change within organizations (Walters *et al.*, 1994:5). Installing any kind of IS will be an intrusion which alters the organization, since it has capacity to alter any or all of the facets of an organization such as the members' knowledge, their working practices, their managerial practices and the nature of power (Nicholas, 2004:9; Checkland & Holwell, 1998:68).

Although information systems are extremely beneficial to organizations, it does have some negative aspects (Stair & Reynolds, 2012:30). Information system development speed and prevalent use puts the users in a position whereby they are open to an assortment of threats from unscrupulous people but most organizations take preventative measures against these by installing control and security measures (Stair & Reynolds, 2012:30).

3.3 Information system development

To understand information systems development (ISD) one needs to define ISD, understand its nature; and be able to distinguish between ISD approaches and methodologies. The next sections will define ISD, and describe ISD nature, ISD approaches and ISD methodologies.

3.3.1 Definition of information systems development

An information systems development (ISD) project is a temporary venture embarked on, using evolutionary expansion to develop a unique IS product, service, or result which has a principal customer or sponsor and needs resources (Schwalbe, 2011:4). Information Systems Development is the act of constructing and adjusting new and existing business systems to meet business objectives and needs, which is often highly complex (Stair & Reynolds, 2012:28).

Information system development can be viewed as a series of steps: preliminary investigation, system analysis, system design, system implementation and system operation, support and security (Stair & Reynolds, 2012:29). This approach of classifying the phases and activities necessary for an ISD project is known as the system development life cycle (SDLC) and it systematizes the activities of every project into phases (Satzinger, Jackson & Burd, 2009:40). SDLC is a deep-seated concept in ISD nonetheless there are numerous variations of the five-phase SDLC and the latest approaches to SDLC embrace iteration across phases (Satzinger *et al.*, 2009:42).

3.3.2 Nature of information system development

Information system development projects can be very diverse in terms of size, intricacy, products created, application area, and resource necessities (Schwalbe, 2011:63). ISD do not exist in a void as they are evidently developed and function inside an increasingly complex and dynamic environmental context that considerably affects them (Avison & Fitzgerald, 2006:7). The dynamic environment of ISD might pose problems for ISD teams, for instance realizing a new technology that can significantly augment and better attain the business requirements when the team is almost at project completion (Schwalbe, 2011:64). ISD project size, vague and

changing requirements and new technologies are all indicators of a need to depart from sequential development are characteristics that necessitated significant SDLC modification includes from the traditional sequential models (Satzinger *et al.*, 2009:666).

The SDLC can be classified in terms of predictive life cycle or adaptive software development (Schwalbe, 2011:60). In a predictive life cycle the project scope can be clearly expressed and it allows for a prediction of schedule and costs and it includes the waterfall model, spiral model, incremental build model, prototyping model and rapid application model (Schwalbe, 2011:60). In adaptive software development life cycle, ISD projects are driven by the organizational mission and component based, utilize time-based phases to reach schedule constraints (Schwalbe, 2011:61) and it includes extreme programming, feature driven development and Scrum amongst others (Schwalbe, 2011:85; Shelly & Rosenblatt, 2010).

Information system development is an intricate set of activities, linking a lot of personnel, lengthy periods of time and contrary objectives (Robey, Farrow & Franz, 1989:1189). An ISD is a multifaceted change process that occurs concurrently in numerous interconnected social environments that generate an intricate web of social circumstances and factors (Butler & Fitzgerald, 1999:351).

The intricacy of ISD often leads to most information systems projects experiencing budget overruns and exceeding time constraints (Stair & Reynolds, 2012:29). Despite investing millions of dollars on ISD, numerous ISD projects fail (Akmanligil & Palvia, 2004:45). Seventy percent of ISD projects fail to meet objectives, experience cost-overruns and are delivered behind schedule or are abandoned (Bentley & Whitten, 2007:68). The distinctive nature of ISD process presents a vital challenge for IT managers and the number of discarded ISD projects and expensive system failures is proof of this (Butler & Fitzgerald, 1999:352).

All ISD necessitates planning, needs analysis, designing a solution, and implementation of the completed system (Satzinger *et al.*, 2009:41). System analysis and design approaches are utilized for the development of information systems on behalf of organizations (Bentley & Whitten, 2007:43). All successful ISD projects use an organized system development approach founded on the SDLC (Satzinger *et al.*, 2009:67).

3.3.3 Information system development approaches

The two general approaches to ISD are traditional approaches and object-oriented (OO) approaches (Satzinger *et al.*, 2009:53). The traditional approach consists of several variations and is based on techniques for structured and modular programming and it uses the structured analysis, structured design and structured programming (Satzinger *et al.*, 2009:53). It views processes and data as separate, and scrutinize the interaction among the two (Shelly & Rosenblatt, 2010:21).

The object oriented approach classifies all of the kinds of objects working in the system and shows the user interactions necessary to accomplish tasks (Shelly & Rosenblatt, 2010:22; Satzinger *et al.*, 2009:59). In the OO approach information systems are perceived as a compilation of cooperating objects to achieve tasks (Shelly & Rosenblatt, 2010:22). The OO approach utilizes the techniques of OO analysis, OO design, and OO programming (Satzinger *et al.*, 2009:60).

Other approaches to ISD based on the variations of the traditional approach include iterative approach as well as the agile approach (Satzinger *et al.*, 2009:67). An iterative approach utilizes a spiral development model that develops an information system on a progression of iterations and increments (Shelly & Rosenblatt, 2010:22; Schach, 2011:45). The project is divided into mini-projects which go through all the steps of the traditional approach towards the development of the entire information system (Schach, 2011:45). In an iterative manner the mini-projects are corrected modified until they are satisfactory (Schach, 2011:45).

The agile approach is the newest development approach and it aims to develop an IS incrementally by developing a series of prototypes and continually adapting them to suit user requirements (Shelly & Rosenblatt, 2010:33). It is founded on structured development and indeed shares most steps of structured development but it utilizes a highly iterative process (Shelly & Rosenblatt, 2010:23). It involves a continuous communication the primary stakeholders so as to ensure that customer specifications are met when developing the ISD (Shelly & Rosenblatt, 2010:23). The development process is fast, easily adaptable, and focuses on small teams, strong communication and quick development iterations (Shelly & Rosenblatt, 2010:24). Scrum and extreme programming are examples of agile development process (Shelly & Rosenblatt, 2010:24).

All approaches have disadvantages. Structured approach facilitates the definition of requirements early in the development process, and this might be expensive to change later during the development (Shelly & Rosenblatt, 2010:18). The OO approach is a newer approach

as users might not be very competent in its use and also in larger systems the relationships between objects and classes can be intricate (Shelly & Rosenblatt, 2010:18). Agile approach requires a high level of technical and interaction skills, it can lack structure and documentation and project is subject to scope change due to changing user requirements (Shelly & Rosenblatt, 2010:18).

3.3.4 Information system development methodologies

There are various ways of developing ISD and these incorporate methodologies, tools and techniques to assist sustain the development process (Avison & Fitzgerald, 2006:23). There are different planning, monitoring and controlling tools available in the form of software programs for use by ISD teams and utilizing these tools is dependent on the available expertise and the merits of the tool in a specific situation (Iles & Hayers, 1997:103). Information system development methodologies (ISDM) affords guiding principles to pursue towards finishing every activity in the SDLC, incorporating the explicit models, tools and techniques (Satzinger *et al.*, 2009:49). Organizational tools that structure and manage team work are essential and valuable; the challenge is to handle the pressure of structure and innovation such that it does not influence the project objectives adversely (Iles & Hayers, 1997:103).

The two general approaches to ISD, namely traditional approaches and object-oriented approaches, are the foundation of nearly all information system development methodologies (Satzinger *et al.*, 2009:53). Information system development is achieved in a lot of different ways by different organizations, i.e. at times it appears that every ISD organization has its own information system development methodology (ISDM) and at times it seems various ISD groups with an organization use various methodologies and every person in the organization may have his/her ways of developing IS (Satzinger *et al.*, 2009:53).

3.3.4.1 Definition of information system development methodologies

According to Huisman and livari (2006:32), an information systems methodology is a combination of system development (SD) method, SD techniques and tools, SD process model and SD approach to successfully develop an information system. System development approach is a philosophical view of the ISDM which are a “set of goals, guiding principles and beliefs and fundamental concepts of SD process to drive interpretation and actions of system

development”, such as OO and structured approaches (Huisman & livari, 2006:32). System development (SD) method is a logical manner of finishing at least one phase of system development life cycle (SDLC), utilizing techniques and tools, guidelines and activities based on the SD approach (Huisman & livari, 2006:32). System development technique and tools are a process with a described notation to complete an IS development activity (Huisman & livari, 2006:32). System development process model represents a series of phases throughout system development, such as spiral model and waterfall model (Huisman & livari, 2006:32).

An ISDM is defined as “a recommended means to achieve development of information systems based on a set of rationales and an underlying philosophy that supports, justifies and makes coherent such a recommendation for a particular context. This recommended means usually includes the identification of phases, procedures, tasks, rules, techniques, guidelines, documentation and tools. It might also include recommendations concerning the management and organization of the approach and the identification and training of participants.” (Avison & Fitzgerald, 2006:24).

An ISDM is also defined as the prescribed and clear-cut system development route that describes a set of activities, methods, best practices, deliverables and automated tools used by IS developers and project managers to develop and recurrently advance information system and software (Bentley & Whitten, 2007:70). The definition by Huisman and livari is preferred in this study because it explains components of an information system development methodology further giving the definition some clarity.

An information systems development methodology is composed of phases, themselves composed of sub-phases, which will guide the system developers in their selection of relevant techniques and tools at every stage of the project and in addition assist them plan, manage and control and assess an ISD project (Avison & Fitzgerald, 2006:27).

All decisions on selection of techniques, tools, and methods have ethical and professional aspects (Avison & Fitzgerald, 2006:19). Professional code of ethics and conduct (PCoEC) guide IS professionals in their work choices (Avison & Fitzgerald, 2006:20). The PCoEC expresses the standards and core values necessary for members’ work and thus govern their behaviour (Stair & Reynolds, 2012:628). Different IS-related organizations and bodies promote morally responsible application of IS and have created constructive codes of ethics (Stair & Reynolds, 2012:628). Even though many IS practitioners subscribe to PCoEC it is not compulsory for them to belong to a Professional code of ethics and conduct body to perform their work (Avison & Fitzgerald, 2006:16).

3.3.4.2 Nature of information system development methodologies

The information systems characteristics that has a significant role to play when choosing an ISD strategy includes system usage within industry, project size, new technology, and project significance (Akmanligil & Palvia, 2004:47).

An ISDM can be bought or created by ISD professionals from within the organization (Bentley & Whitten, 2007:71; Satzinger *et al.*, 2009:49). The utilization of an ISDM assists to smooth the progress of efficient and successful management of ISD (Walters *et al.*, 1994:5). According to Bentley and Whiten (2007:68) using ISDM should be used to develop IS because firstly it creates efficiency that lets managers to exchange resources between projects; secondly it produces consistent documentation that decreases IS maintenance costs; and finally the US government commands the use of quality standards to develop its systems.

Walters, Broady and Hartley (1994:16) identify 6 reasons why ISDMs should be used by organization in ISD and these are:

- 1) An ISDM provide management and development of IS with a framework and a set of rules, guaranteeing ISD are satisfactorily satisfied.
- 2) New team members can be trained in the regulations and principles, tools, techniques and concepts established in all ISDM.
- 3) Uniformity in ISD process ought to lead to stability in the developed system and, consequently, in its maintenance i.e. it makes it easier for new team members to be part of system development.
- 4) An ISDM supply discipline in the ISD process, it decreases dependence on instincts and the requirement for an experienced IS developer, and broadens scope for diverse stakeholders' involvement in the ISD process.
- 5) An ISDM augment the quality and completeness of ISD, as the products are transparent to examination and therefore facilitates the successful and efficient ISD.
- 6) Applying ISDM aids in reducing user resistance to technological innovation.

3.3.4.3 Shortcomings of information system development methodologies

It is not always essential or suitable to utilize a formal ISDM for software construction (Davidson, Hedrich, Leavy, Sharp & Wilson, 2007:2). No single methodology is completely proper without some alteration, e.g. structured ISDM is criticized for overlooking many facets of correctly determining requirements and for their inflexibility (Walters *et al.*, 1994:16). The ISDMs are also criticized because they fall short of delivering recommended productivity or benefits (Avison &

Fitzgerald, 2006:587). They are also criticized for failing to address appropriately the design and implementation of the new IS, as they are more concerned with requirements determination and system analysis (Walters *et al.*, 1994:16). The difficulty is to comprehend when project complexity becomes critical and where a formal ISDM will improve the product and meet the time constraints (Davidson *et al.*, 2007:2).

There are instances when ad hoc ISD process is permissible e.g. ISDM is likely to delay the delivery schedule in small or non-critical projects (Davidson *et al.*, 2007:2). Some organizations use a contingent approach to ISDM, which involves using ISDM structure, then depending on the situation determine the tools and techniques to utilize (Avison & Fitzgerald, 2006:587). They maintain that situations differ depending on the project type objectives, the organization and its environment, the users and the IS professionals and their skills (2006:587). Some organizations are still searching for the ideal ISDM (Avison & Fitzgerald, 2006:587). Some organizations utilize external development which includes the use of packages and outsourcing alternatives (Avison & Fitzgerald, 2006:587).

3.3.5 Information systems development environment

Most IS managers are concerned with improving the effectiveness of ISD projects and they are frustrated with IT costs, standards on infrastructure, and accumulation of system requests are forcing them to search for alternatives to ISD (Akmanligil & Palvia, 2004:46).

In ISD, different tasks are accomplished through the sharing of resources (Yang & Tang, 2004:338). Most ISDMs classify the human resources needed for each task in ISD in terms of roles (Bentley & Whitten, 2007:136). An ISD project requires and shares resources such as human resources, services, facilities and equipment, materials and supplies and funding (Bentley & Whitten, 2007:136). Resources availability particularly human resources and facilities can considerably modify project schedules (Bentley & Whitten, 2007:136).

An ISD project is a chance for stakeholders to negotiate favourable outcomes (Robey, Smith & Vijayarathy, 1993:125). In spite of contradictory interests amid ISD stakeholders, it is possible for the ISD managers or project leaders to facilitate conflict resolution and achieve a win-win result, perceived effective by all stakeholders (Robey *et al.*, 1993:125).

Globalization has led to new challenges for organizations and individuals and these challenges are cultural, language, time and space, infrastructure, currency, product and service, technology

transfer issues, provincial and national laws, and trade agreements (Stair & Reynolds, 2012:34). Globalization of companies complicates ISD and its success as it increases the intricacy of ISD process by bringing in many new variables such as different business environments, accessibility of resources, technological and governance environments (Akmanligil & Palvia, 2004:46). Ishemo (2002:35) argues that technology is not free of culture, since it comprises a way of performing things. Technology is one of the major elements of people's identity (Ishemo, 2002:35). Globalization results in the challenge of using information technology to manage organizational activities worldwide (Akmanligil & Palvia, 2004:45).

Humans are the most important aspect of ISD, and they are often ignored, they are the unforeseen facet as they finally decide if a system is successful or not (Schwalbe, 2011:25; Walters *et al.*, 1994:16). ISD is generally the product of interactions between ISD team members, since the workforce participating in ISD incorporates system analysts, users, programmers and project managers (Yang & Tang, 2004:335). ISD brings together envoys of users and IS professionals in circumstances of time constraints and resource pressure (Robey *et al.*, 1989:1189).

3.4 Information system development teams

To understand information systems development (ISD) teams one needs to define the team, understand its structure and techniques; and be able to describe the existing ISD team dynamics, team problems. Intercultural information systems development (ISD) teams are essential to this study therefore intercultural teams are explained in detail as well. The next sections will define the term team, and describe ISD teams' structure, techniques and dynamics and intercultural teams.

A team is a group of people, who individually possess special skills and knowledge, led by a competent leader (Gibson, 2002:90). An IS team is a group of professionals responsible for developing an IS product (Schach, 2011:107). An IS team concerns itself with daily IS development and includes analysts, systems architect, hardware engineer, programmers, network specialist, quality assurance specialist, software engineer, technical writer and users (Schwalbe, 2011:64; Avison & Fitzgerald, 2006:14). Some ISD projects need the skills of a few employees to accomplish tasks yet they require inputs from all IS team members (Schwalbe, 2011:64). ISD project teams are generally assembled when project exists and disbanded when project ends (Bentley and Whitten, 2007:14). Many ISD project teams include a sizable number of contract workers (Schwalbe, 2011:64).

Teamwork in ISD is a crucial issue (Yang & Tang, 2004:335). Teamwork makes it possible to successfully complete most IT projects (Schwalbe, 2011:362; Schach, 2011:107). One of the most apparent advantages of teams is that they present greater quantity of skills and knowledge to be exploited (Driskell & Salas, 1992:277). Other advantages of teamwork include prospect to share resources and correction of errors (Driskell & Salas, 1992:285).

A number of internal and external factors can influence a team and these include industry environment, global environment, organization structure, organizational strategy, powerful stakeholders, technology state, and the position of suppliers, contracts and customers (Iles & Hayers, 1997:103). Multinational ISD project teams are influenced by negotiation, strategy and conflict resolution skills (Iles & Hayers, 1997:103).

3.4.1 Information system development team structure

Structure adds to organizational effectiveness, and it is resultant from management decisions about the partition of labour, foundation for departmentalisation, assignment of authority and the sizing the departments (Gibson, Ivancevich & Donnelly, 1997:327). Managers utilize structure to control organizational components so as to achieve essential strategic levers such as efficiency, flexibility, quality, competitiveness, satisfaction and development and to influence behaviour of teams and individuals (Gibson *et al.*, 1997:327).

3.4.1.1 Information systems development team structure

Today's organizations employ various teams or workgroups and these comprises different organizational stakeholders coming together to achieve an assortment of tasks such as problem-solving and decision-making (Limon & La France, 2005:123).

Schach (2011:121) identifies the different types if ISD team approaches as the democratic team approach, classical chief programmer approach, modern hierarchical programming teams, synchronize and stabilize teams, collaborative specialist team, extreme programming team, and open-source programming teams approaches.

Democratic team approach includes team members of roughly equal skill and experience with overlapping areas of specialization who make consensus-based decision making and meets frequently to exchange information and build consensus (Satzinger *et al.*, 2009:626).

Classical chief programmer team is organized as a military squad and it includes a team with a one leader who makes every vital decision (Schach, 2011:111; Satzinger *et al.*, 2009:626). This type of team approach is good if objectives and the path to completion are well defined (Satzinger *et al.*, 2009:626).

Modern hierarchical programming teams, involves an ISD team that has a team leader and a team manager and other team members (Schach, 2011:114). The team leader is responsible for technical aspects of team's activities and the team manager is responsible for non-technical decisions (Schach, 2011:114).

Synchronize and stabilize team structure is another alternative approach used by Microsoft Inc. and is based on the iterative-and-incremental software development strategy (Schach, 2011:117). This involves the development work being divided into three to four builds, then small ISD teams creates those builds in parallel, at the end of the day all the teams synchronize and stabilize the builds with the aid of three to four testers (Schach, 2011:62). This strategy ensures that programmers are given the confidence to be pioneering and creative and also that they work together towards a mutual goal without requiring the coordination and interaction of the chief programmer (Schach, 2011:117).

Collaborative specialist team is a team with members who have a wide variation and a minimal overlap of skills and experience who make consensus-based decision making and has an administrative leader (Satzinger *et al.*, 2009:626).

Extreme programming (XP) is an ISD team technique where IS developers, managers, and users code in pairs and write and tests their own code (Schach, 2011:59; Shelly & Rosenblatt, 2010:24). It centres on powerful communication amongst users and developers to define and attain project goals (Shelly & Rosenblatt, 2010:24).

Virtual teams are characterized by globally dispersed teams who seldom meet face-to-face, carrying out an organizational mandate to make or execute decisions with worldwide facets and repercussions (Thompson, 2004:292; Maznevski & Chiboda, 2000:473). Virtual teams might be advantageous e.g. hastening product development by exploiting the time zone differences and its disadvantages can be minimized by teleconferencing, fax, voice message and email systems (Iles & Hayers, 1997:103). These communication systems although helpful can also slow down

the development of team cohesion, which still necessitates face-to-face interactions (Illes & Hayers, 1997:103).

Open-source programming teams consist of a team of voluntary members, interacting asynchronously, never meeting face-to-face and without managers, who develop information systems (Schach, 2011:118). Most projects have no specifications or designs and documentation very rare, yet there have been some successes, e.g. Linux and apache (Schach, 2011:119).

Team structure is founded on several elements which are the type of team member roles and standing in a group, the number and types of subgroups that subsists and communication networks that distinguishes the team (Baron & Kerr, 2003:19). A good integration of action and structure factors by management can strengthen the probability for high-quality decisions (Kangis & Williams, 2000:534). Team structure that contributes positively to performance must be structured to guide the behaviour of individuals and groups to achieve high levels of productivity, flexibility, satisfaction, quality and development (Gibson *et al.*, 1997:329). All jobs are structured and therefore influence one's behaviour to successfully complete tasks (Gibson *et al.*, 1997:329).

3.4.1.2 Information systems team development techniques

The information systems development team techniques include extreme programming, prototyping, joint application development (JAD), Scrum and virtual project teams (Shelly & Rosenblatt, 2010:139).

Extreme Programming accentuates open and effective interaction amid team members (Satzinger *et al.*, 2009:63). Pair programming of XP enables less skilled ISD professional to attain skills of the more skilled colleague (Schach, 2011:118). It is criticized as being an insubstantial ISDM since it is simple and centred on efficiently improving the development process for the IS developer (Satzinger *et al.*, 2009:63).

Prototyping is an ISD team technique for rapidly constructing an operational yet unfinished model of the IS using rapid application development tools to determine user requirements (Bentley & Whitten, 2007:98). Prototyping is advantageous when some segment of requirements cannot be completely specified without the help of architectural or detailed design; unidentified or vague technical feasibility for certain system functions; powerful prototype

development tools can enable a complete working system (Shelly & Rosenblatt, 2010:315; Satzinger *et al.*, 2009:334).

Joint application technique is a facilitated ISD group technique for quickly defining system requirements (Satzinger *et al.*, 2009:147). It is intended to promote team cohesion and attain synergy by influencing the pooled knowledge of participants and it may be utilized to determine systems requirements (Duggan & Thachenkary, 2004:399).

Scrum is another team development technique used in ISD and involves repetitive development in which iterations, known as sprints, usually lasting for about thirty days whereby teams meet daily for a scrum (short meeting) to decide which tasks to attain that day and it normally works best for OO ISD projects and require strong leadership to manage the work (Shelly & Rosenblatt, 2010:24).

Virtual teams are characterized by globally dispersed teams who seldom meet face-to-face, carrying out an organizational mandate to make or execute decisions with worldwide facets and repercussions (Maznevski & Chiboda, 2000:473). Virtual teams utilize communication technologies such as videoconferencing, email, conference calls or application sharing to interact with one another (Thompson, 2004:292).

3.4.2 Information systems development team dynamics

Teamwork is an interdisciplinary research topic which has a realistic concern to employees and managers (Yang & Tang, 2004:335).

An ISD project success requires strong collaboration from all the stakeholders and therefore is subject to IS project risks as well as all the idiosyncrasies of group dynamics and communication (Jiang, Klein & Means, 2000:19). A successful team requires the integration of 5 different team dynamics and these are: stages of team development and recurring phases; team building issues; team composition and roles; types of decisions and sources of power; and giving productive team meetings (McNeill, Bellamy & Burrows, 2000; Bellamy, Evans, Linder, McNeill, & Raupp, 1994:11). An actual or perceived team member perception of poor teamwork is sufficient to alter team dynamics and cause team member withdrawal (Sexton, Thomas & Helmreich, 2000:745).

3.4.2.1 Information system development team development

Team development aims to assist team members to work together more effectively so as to augment project performance (Schwalbe, 2011:363). Team development aims to improve team effectiveness by improving group processes utilized by teams to work together (Bramley, 2003:48). Even in a team of highly skilled members, the ISD project manager should ensure that the team pulls together to attain project goals (Schwalbe, 2011:363). Schwalbe (2011:363) explains the Tuckmann Model of team development which has five stages and these are:

- 1) Forming (Orientation) – during this stage new team members are introduced to each other.
- 2) Storming (Conflict) – team members start expressing diverse opinions in how to run the team and often conflict arises.
- 3) Norming (Cohesion) – is attained when team members have reached common ground, and they cooperate and collaborate.
- 4) Performing – during this stage the team concentrates on achieving ISD team objectives.
- 5) Adjourning – when the team has completed the project, team dissolution is the next step.

This study aims to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team therefore the discussion that ensues will focus on conflict and cohesion during ISD team performance.

Conflicts

During the second phase of ISD team development conflicts occur within newly developed ISD teams (Schwalbe, 2011:363). An ISD project involves high probability for conflict and disagreements are prone to occur under circumstances of high cohesion amid team members in project meetings (Robey *et al.*, 1989:1173). Most conflicts in ISD are resultant from interdepartmental or lateral conflict in organizations, where departments with diverse aspirations may deliberately or accidentally meddle with another's efforts to achieve aspirations (Robey *et al.*, 1989:1173). Group setting is used to tackle differences and arrive at a resolution rather than evade them (Robey *et al.*, 1989:1173).

An ISD team's members and participants are from diverse departments, which may vary significantly in structure, training, members' cognitive orientation, career paths and departmental mission and these may lead to conflict (Robey *et al.*, 1989:1173).

Schwalbe (2011:400) outlines Blake and Mouton's five modes for handling conflicts as confrontation, compromise, smoothing, forcing and withdrawal. In confrontation mode, project managers utilize a problem-solving approach that permits disputing parties to resolve their

disputes (Schwalbe, 2011:400). The compromise techniques involves give-and-take approach whereby bargaining and searching for some degree of satisfaction to disputing parties (Schwalbe, 2011:400). The smoothing technique alternatively manages by minimizing dissimilarities between the conflicting team members and highlighting their mutual interests as and when each member concurs to surrender something worthwhile; they will have arrived at the level where they are agreeable to compromise (Smit & Cronje, 2002:382). The forcing technique, which is also termed the win-lose technique, is the process whereby the project manager forces his perspective at a potential disadvantage of another perspective (Schwalbe, 2011:400). The withdrawal technique is the process whereby the conflicting parties pull out from the conflict (Smit & Cronje, 2002:382). This strategy rarely works as a more effectual problem solving methods are available where the conflicting parties sit together face-to-face and engage in negotiations with the aim of identifying and resolving the problem (Smit & Cronje, 2002:382). According to Schwalbe (2011:400) most managers prefer confrontation when handling conflicts.

Cohesion

Cohesion refers to the how magnetic the team in entirety is to its members (Baron & Kerr, 2003:11) i.e. the extent to which a team is committed to cooperating together (Griffin & Moorhead, 2007:243). ISD team members should cooperate with each other meaningfully and effectively (Schach, 2011:107). Social network analysis enables the description of fundamental relationships amid team members and possibly achievement of enhanced comprehension of team processes (Yang & Tang, 2004:335). It is of greater importance to comprehend networking within a team to attain the results rapidly and keep abreast of present knowledge regarding technical expertise and what occurs inside the organization outside the project team (Iles & Hayers, 1997:103).

Interactions in an ISD team may encompass task-related and social-related maintenance (Yang & Tang, 2004:338). Task-related interaction is reasonably formal and structured, and it handles the relationships established so as to complete the job at hand (Griffin & Moorhead, 2007:231). Social-related interaction refers to personal relationships that occur between team members (Griffin & Moorhead, 2007:231) and are intended to enhance communication, mutuality and dependence within the group through negotiations on how the members interact with each other (Bramley, 2003:31). Task-related support might shape an advice network, and social-related maintenance may reinforce emotional support or the relationship (Yang & Tang, 2004:338). Face-to-face teams are generally perceived as the suitable organizational medium for interactions in ISD (Robey *et al.*, 1989:1173).

3.4.2.2 Team building issues

Team building assists the team in avoiding conflict and problem solving as a result of stress (Nicholas, 2004:511). Team building issues should be focused on interdependence, goal specification, cohesiveness, roles and norms and communication (McNeill *et al.*, 2000). Other techniques for team development in ISD include training for team members in team dynamics using physical challenges and psychological preference indicator tools; and team reward systems (Schwalbe, 2011:364). Teams are characterized in terms of group dimensions which are made up of group norms, team size, team structure, cohesion, leadership, group development stages and the extent of group entitativity (Baron & Kerr, 2003:19).

Interdependence

Interdependence is the team members' collective behaviour also known as "reciprocal give and take behaviour" and it is highly important to team success (Driskell & Salas, 1992:278). The team members' ability to interdependently exchange information is crucial to effective team performance (Stewart & Barrick, 2000:137). It enables team members to exchange resources, pool information and minimize errors in when completing a task (Driskell & Salas, 1992:277).

Goal specification

Goal specification is the extent to which a team member participates in creating and giving precedence to team goals (Sonnentag & Volmer, 2010:117). Research has shown that team members' who selects their goals can have improved performance (Sonnentag & Volmer, 2010:117).

Cohesiveness

Team cohesiveness describes how team members are motivated or attracted to belong to the team (Wendt, Euwema & Emmerik, 2009:359). Team cohesiveness has been found to be the one most essential factor in achieving project objectives (Nicholas, 2004:510). The research by Wendt *et al.*, (2009) found that the national culture does not influence team cohesiveness.

Team member roles

A role is some task that a person performs because he or she possesses particular skills (Bentley & Whitten, 2007:136). Team members are often selected on the basis of their functional roles, i.e. roles that are related to an individual's occupation role and function in the organization e.g. programmer, financial manager or project manager, regarded as most relevant proportionate to the task that the team must execute (Senior, 1997:242). Team members are also required to possess task-work skills so that they are able to perform individually assigned tasks e.g. to interact, communicate and coordinate tasks effectively with each other as members

of the team (Bramley, 2003:30). These skills can be developed through training (Bramley, 2003:30). Section 3.4.2.3 explains more on the different team roles and stakeholders in ISD projects.

Team norms

Team norms refer to socially acceptable beliefs, conduct, attitudes and perceptions of group members that are expected and mostly demanded from members (Baron & Kerr, 2003:6). Team norms are not penned down but are decided upon by team members based on a precedent (Thompson, 2004:23). Teams affect an individual's attitude, decisions and behaviours (Baron & Kerr, 2003:19). Norms are a way of developing a team culture (Thompson, 2004:22)

Communication

Communication is vital in organizations because it functions to ensure quality products and services, obtain innovative ideas from personnel, adapt to changes and ensure that personnel works well collectively and comprehend the organisation's objectives (Fielding, 2006:13). Communication and cooperation of ISD project team members for effective problem solving starts with empathetic listening (Schwalbe, 2011:23). Communication is discussed in depth in section 4.3.

3.4.2.3 Team composition and roles

Team composition describes what inspires team members and how they create relationships of trust (Olson & Olson, 2003:52). Team composition also refers to the diversity of the group members, i.e. the heterogeneity and homogeneity of the team members, for instance age, education, work experience, and culture (Griffin & Moorhead, 2007:37).

The composition of an ISD team will vary as the system progresses through the development process, even though there is one project manager who makes certain that there is project continuity throughout the development process (Avison & Fitzgerald, 2006:14).

Frequently ISD project team members comprise diverse backgrounds and skill sets (Schwalbe, 2011:64). Different ISD team skill sets includes business analysts, network specialists, programmers, software engineers, quality assurance specialists, database specialists, technical writers, system architects and hardware specialists (Schwalbe, 2011:64). An ISD team member

with diverse skill sets might experience communication difficulties, e.g. hardware specialist might not understand the terms used by a database analyst (Schwalbe, 2011:64).

IT projects use different technologies that change every now and then and still within one technology area, ISD team members must be highly skilled (Schwalbe, 2011:64). Different IS technologies might cause communication difficulties among team members with the same skill sets as they might not understand one another because they use different technologies, e.g. a programmer might use several different programming languages, but a COBOL programmer is useless in a Java project (Schwalbe, 2011:64).

The ISD process is generally the product of interactions between ISD team members, since the workforce participating in ISD incorporates different role players (Yang & Tang, 2004:335). Stakeholders in an ISD project comprise of IS professionals, IS users and external users (Avison & Fitzgerald, 2006:20). IS professionals includes programmers, systems analysts, business analysts, project managers, senior IS managers, and chief information officer (CIO); IS users includes end-users, business strategy management, and business management; and external users comprise of clients, information users, trusted external users and society (Avison & Fitzgerald, 2006:11).

Other ISD role players include the ISD executive sponsor, project auditor, purchasing specialist, management sponsor, system modeller, Joint Application Development (JAD) facilitator, and JAD scribe (Bentley and Whitten, 2007:136). One of the issues associated with ISD is the incapacity of significant stakeholders, such as users, to partake in the ISD process (Nicolaou, 1999:130). Accordingly, recommendations for user participation have been part and parcel of the technical modifications in ISD over the years (Nicolaou, 1999:130).

Stakeholders including clients and suppliers can negatively or positively influence a project team (Iles & Hayers, 1997:103). Although user participation is often recommended for ISD, and it can result in successful outcomes in certain conditions, most studies condemn it for methodological flaws and lack of theoretical basis (Robey *et al.*, 1989:1172).

The assigned team member's role is relevant to a team member's abilities and behaviour (Senior, 1997:242). The IS professionals should improve their technical as well as business skills to be productive team members and prospective project managers (Schwalbe, 2011:26). The abilities and actions of team members are very important to the performance of a team (Senior, 1997:242). A team member in an ISD team may possess the skills to participate in several roles and also numerous team members may possess the skills needed to participate in an assumed role (Bentley & Whitten, 2007:136). Even though team members perform their functional roles,

they will also perform one or more team roles, for example additional roles might include decision making, information gathering, and coordinating other team members' contributions (Senior, 1997:242).

Routines develop in team members because they are functional, in that they afford team members a mechanism to predict other team members' actions; they permit for increased efficiency, since organizational processes do not require vigorous management; and they decrease the uncertainty of team members about their role responsibilities (Lepine, 2008:27). However, it is critical for a team to occasionally alter their routines to address changes in their task environment (Lepine, 2008:27).

Performance of any business, large or small, is in direct proportion to the quality of its leadership, though leadership is not the only ingredient of success but is certainly an important one (Cronje, du Toit & Matlatla, 2000:147). The leadership style refers to how a manager handles the team affairs and is a vital team characteristic (Baron & Kerr, 2003:19). Bentley and Whitten (2007:139) recommend that ISD project leadership should be consistent, supportive, not make promises they cannot honour, commend in public and disapprove in private, be conscious of morale danger points, set pragmatic deadlines, set realizable targets, explain and demonstrate rather than do, not depend only on status reports and finally but not least should encourage good camaraderie. Good leadership is necessary to assist in improving communication in ISD teams (Schwalbe, 2011:401).

3.4.2.4 Decision-making

Decision-making in teams is comparable to the conversion that happens in work systems, it involves input, processing and output (Duggan & Thatchenkary, 2004:402). A regular activity of group work is weighing and choosing a range of decision alternatives (Ngwenyama & Bryson, 1999:488). Members of a decision-making team share information with each other to make conclusions and recommendations regarding a relevant course of action (Lepine, 2008:29). There are 5 main types of team decision making styles utilized in teams namely autocratic; inquiry; consultative approach; consensus and delegation building decision making styles (Thompson, 2004:245; Yousef, 1998:368).

An autocratic decision making style is the process whereby the decision is solely made by the leader (Yousef, 1998:369). Inquiry decision making style also known as pseudo-consultative is where the leader seeks information from team members but eventually the decision making is

solely his/her responsibility (Thompson, 2004:245; Yousef, 1998:369). The consultative approach decision making style is where the leader consults with the team but still makes the decision (Thompson, 2004:245). Consensus building decision making style also known as participative decision making style is where the leader extensively consults with the team and then they make the decision together (Yousef, 1998:369). Delegation decision making style is where the leader allows the team to make decisions to solve the problems without him/her (Thompson, 2004:245).

Lepine, (2008:29) maintains that unforeseen alteration in the team's task context can obstruct smooth flow of information amid team members thereby resulting in less effective conclusions and recommendations and finally less effective decisions. As a result performance of a team's decision-making should be positively linked with the degree to which a team can change its role structure after an unpredictable change (Lepine, 2008:29). ISD is perceived as the process that results in a decision about the choice, design and implementation of information systems (Robey *et al.*, 1993:124).

3.4.2.5 Power

Power and status alter communication patterns in teams (Toseland & Rivas, 2009:70). Nonverbal communication signifies status and power relationships (Richardson & Smith, 2007:483; Galanes, Adams & Brillhart, 2004:89). Status is a judgment or rank awarded based on a systematized hierarchy of values created by people from their evaluation of objects, behaviours and personal attributes with which they interact (Goldhamer & Shils, 1939:181). A person is awarded status based on how the individuals value hierarchy and how they know his/her characteristics (Goldhamer & Shils, 1939:181).

Teams affect an individual's attitude, decisions and behaviours (Baron & Kerr, 2003:19). Power is the aptitude to influence actions to get people to perform activities they would not perform (Schwalbe, 2011:348). Power determines the ability of a team member to persuade others in a task-directed team in compliant with his / her intentions (Goldhamer & Shils, 1939:171). The five different types of power include coercive power, legitimate power, expert power, reward power and referent power (Raven & French, 1958:83).

Coercive power is when an individual exercises force, domination, and exploitation to influence the actions of others so that they perform in compliant with his / her intentions (Goldhamer & Shils, 1939:172). Goldhamer & Shils (1939:172) explains that legitimate power is when the

assertion of behavioural influence is recognized by the subordinates, because it is legal, traditional, or charismatic. Expert power is when an agent uses his/her personal knowledge and expertise to influence people (Raven & French, 1958:83; Schwalbe, 2011:349). Reward power means using incentives to influence the behaviour of people (Raven & French, 1958:83). Referent power is the ability to influence people's behaviour based on an agent's charisma (Raven & French, 1958:83).

Cues and reinforcers, emotional bonds, subgroups, team size and physical arrangements, and power and status change communication patterns in teams (Toseland & Rivas, 2009:70). Understanding and practicing the concepts of power, influence, motivation, and improving effectiveness is essential to project managers so as to increase their own and the team's advantage (Schwalbe, 2011:344).

3.4.2.6 Team meetings

A well-managed team meeting can foster team building and reinforce expectations, relationships, roles and ISD project teams (Schwalbe, 2011:402). Schwalbe goes on further to give the following guidelines for conducting meetings to improve time spent in meetings:

- 1) Establish if the meeting is unavoidable.
- 2) Define intention of the meeting.
- 3) Determine the meeting attendees.
- 4) Provide a participative agenda ahead of the meeting.
- 5) Prepare materials, visual aids and make travel arrangements in advance.
- 6) Conduct the meeting competently.
- 7) Strengthen relationships.

3.4.3 Team problems

Teams usually learn faster than individuals, made fewer errors, remembered better and were more prolific with a better quality project (Baron & Kerr, 2003:38). Albeit teams are more likely to be more successful, they are more likely to be less efficient as they are influenced by group process loss, for instance when the most proficient members of a problem-solving team are not confident, have low standing or are reticent, the team tends to underutilize its resources (Baron & Kerr, 2003:50). The lack of ability for every member participating in an interrelating team to

speak and think simultaneously can also hinder optimal group performance (Baron & Kerr, 2003:50).

The increase in the number of people partaking in an IS project increases the intricacy of communication since there are more communication channels (Schwalbe, 2011:395). The increase in team size and project scope increases the project coordination costs and risk (Akmanligil & Palvia, 2004:48). An ISD team should be adequately sized so as to afford sufficient backup and coverage in core skills if a team member is unavailable (Bentley & Whitten, 2007:138). An effective team should not be too large so as not to allow every member to partake in group dialogues, decisions and actions and it should not be too small such that it is impossible to successfully accomplish the prescribed tasks (Hybels & Weaver, 2004:356). Larger groups are advantageous in that they are more likely to include individuals with a wide range of skills and allow members to feel more anonymous (Baron & Kerr, 2003:7). It is disadvantageous in that members may not participate fully in group tasks; members have lower morale; and it has a strong influence on group communication (Baron & Kerr, 2003:7). A small group reduces communication overhead and complexities (Bentley & Whitten, 2007:138).

Extremities in teams include groupthink, group polarization, mob action and intense indoctrination (Baron & Kerr, 2003:118). Groupthink is whereby the group's desire to be in agreement overrides critical analysis and discussion, the group desire to be cohesive and thereby reaches unintended results (Pearson, Nelson, Titsworth & Harter, 2006:226). Groupthink involves the corrosion of rationality, objectivity, and moral judgment yielding to group pressure in favour of group cohesion (Thompson, 2004:132). Many poor decisions and policies occur as a result of groupthink (Barker, Wahlers, & Watson, 1995:178).

Group polarization is the process whereby group discussion strengthens group perception creating more extreme opinions than obtaining individual views independently (Thompson, 2004:147). The polarization effect is not transient as it alters people's perceptions beyond the meeting and it strengthens with time (Thompson, 2004:147).

Anonymity, joint responsibility, power and their influence on social constraints are some of the factors that cause mob action (Baron & Kerr, 2003:119). Group extremities created by mobs may decrease fear, remorse and assumed accountability (Baron & Kerr, 2003:112). Participation in a large group frequently provokes incitement and a deluge of excitement (Baron & Kerr, 2003:112).

Intense indoctrination is a manipulative and coercive thought reform process, which is achieved through sequential phases, transforming beliefs, attitudes, morals and conduct that results in

transformation of the self-concept (Baron, 2000:238). More often than not individuals are coaxed into behaviours that are contrary to their values towards achieving a specific outcome (Baron, 2000:243).

An ISD team has a range of management issues including team structure, team role assignments and communication and coordination of member and team (Satzinger *et al.*, 2009:625).

3.4.4 Intercultural teams

An intercultural team is a work group comprising of members from diverse cultures that interact together to achieve a common purpose (Humes & Reilly, 2008:119). An intercultural ISD team may have differences that are founded in team composition and teamwork (Olson & Olson, 2003:55). Team composition issues includes team membership, ascription of team members, and motivation whereas the teamwork issues includes planning the work, decision making process and content, varying augmentation styles, conversation content, conversational flow and usage of time (Olson & Olson, 2003:55).

Intercultural ISD teams tend to require high quality team building due to cultural heterogeneity that exists in the teams, so that they experience less communication problems and also so that they efficiently utilize social and technical skills (Iles & Hayers, 1997:102). Team-building tools accessible to the multinational ISD project team include external tools for instance external bound courses, visioning techniques, external training and internal training facilitated by consultants or even an external project manager (Iles & Hayers, 1997:102).

Culture fulfils an important role in the motivation of team members, since it influences team member's conduct and the justifications they provide for their conduct (Hofstede & Hofstede, 2005:264). Motivation theories and communication skills training can assist team members to contend with and sustain the emotional climate of a heterogeneous team (Iles & Hayers, 1997:102). Comprehending what motivates key stakeholders and customers can assist the ISD projects to succeed (Schwalbe, 2011:410).

Group development stages can be utilized to evaluate the formation and growth of culture and project team climate (Iles & Hayers, 1997:102). Current research findings have shown that multicultural teams experience more group process problems than homogeneous groups initially (Oetzel, 2005:352; Watson, Kumar & Michaelson, 1993:596).

Teams that identify and aspire to invigorate lethargic team members can create forums for articulating and investigating such issues (Iles & Hayers, 1997:102). The team then can resolve these motivation issues without withdrawing into defensive positions and therefore release positive energies that can be directed back into the project (Iles & Hayers, 1997:102).

The function of information systems should be viewed as a cultural process in which social reality is constantly explained and re-explained in both speech and behaviour which bears and conveys multiple agenda of both the organizational members and important stakeholders outside the organization (Checkland & Holwell, 1998:68). Multicultural ISD teams need to consider national culture, organizational culture and professional culture (e.g. strong engineering culture in certain organizations); particularly where overall performance is a major objective, a professional culture of mutual beliefs may promote crucial team integration (Iles & Hayers, 1997:103).

An effective multicultural team-member can exchange both verbal and non-verbal cues with a foreign national thereby creating a meaningful relationship with them (Matveev & Milter, 2004:105). Team cultural diversity should be managed well to reap the benefits (Oetzel, 2005:352). Team performance can benefit from cultural diversity because of the combination of different ideas and different problem-solving approaches (Cox, 2001:7). Intercultural teams are discussed in detail in chapter 4 as well.

3.5 Information system development team performance

Main aspects of team performance comprise completing assigned tasks and longer-term feasibility through thoughtfulness for the health of the team members (Bramley, 2003:29). Current complex information systems necessitate effective team performance (Driskell & Salas, 1992:277). It is crucial to maintain the balance between the task and the well-being of team members because putting too much emphasis on one and not the other can lead to problems of long-term viability and the team being dysfunctional (Bramley, 2003:29).

An organization's performance in their endeavour to satisfy organizational goals is dependent on numerous factors including organizational strategy, organizational structure, technology, employees and management style (Senior, 1997:241). The human factor is the most important factor in determining performance since the actions of individual employees contributes to performance at individual, team and organizational levels (Senior, 1997:241). Individual

performance is determined by many factors, some intrinsic and others reliant on the performance environment such as system factors, the design and organization of production and other elements of this environment effects directly on the people (William, 2002:143). Team performance has the propensity to surpass individual performance, (Bellamy *et al.*, 1994:10)

Team performance in organizations is a crucial factor to the overall organizational performance (Senior, 1997:242). According to Jiang *et al.* (2000:19), an ISD team performance is characterized by realizing schedules and budgets, effective cooperation with all stakeholders, effective use of technical skills and producing superb final results.

The project manager and team members should be conscious of critical success factors that could influence team members and team performance (Iles & Hayers, 1997:102). Spector (1994) and Schwalbe (2011:15) identified user involvement, strategic management support, unambiguous statement of requirements, correct planning, realistic expectations, smaller project milestones, competent staff, ownership, unambiguous vision and objectives and hardworking, focused staff as the ten critical success factors of ISD projects.

Schwalbe (2011:16) maintains that when measuring project success the researcher should search beyond individual project and focus on how the whole organization improves project performance. She maintains that organizations that excel in project success rate are characterized by the utilization of an integrated toolbox or in other words ISDM; developing project leaders; developing rationalized project delivery process; and measuring project performance using metrics.

Research has shown that team cohesion, communication and coordination are all interconnected with team performance (Brannick, Roach & Salas, 1993:288). Research has also shown that team structure appears to be a critical success factor in team performance (Yang & Tang, 2004). Leadership is also regarded as a critical team performance success factor (Cronje *et al.*, 2000:147). Team member competencies and behaviour is also one of the critical team performance success factors (Senior, 1997:242).

Yang and Tang (2004) conducted the research on how ISD team structure affects team performance. They studied the group structure characteristics of cohesion, conflict and centrality on ISD performance from the perspective of social networks. They found out that team structure appears to be a critical success factor in team performance. Their findings are as follows: Group cohesion was positively correlated to overall performance; Group conflict indexes were not significantly correlated with overall performance; Group characteristics, e.g., cohesion and conflict, varied in different phases of ISD, although in later phases, much less cohesion

transpired and the advice networks appeared to be very critical; Group structures appeared to be a critical success factor for good performance.

When measuring the team structure and performance Brannick *et al.*, (1993:291) realized that observing communication activity was complicated, because some teams produced a lot of behaviours in a short time. Most managers observe that there is a need to improve communication between the stakeholders and the IS professionals as a way of increasing performance of ISD products (Schwalbe, 2011:23).

The performance measures must clearly be outlined since complexities occur when objective measures for evaluating performance are non-existent (Senior, 1997:246). Suitable team process measurement should exhibit sensitivity to current team diversity or team composition consequences and should foresee team performance (Brannick *et al.*, 1993:291).

3.5.1 Team performance climate

Teams that perform well are characterized by a supportive climate, effective interaction and effective methods for accomplishing objectives (Fielding, 2006:73). High performance climate is characterized by team members who constantly perform whatever is necessary to achieve organizational goals (Watkin & Hubbard, 2003:381). An organizational climate that guarantees project success ensures clarity of goals and targets; provides required information to support the team to incorporate its activities with the rest of the organization; provides required resources for the team to accomplish tasks; provides appropriate/related training for team members so that they can be competent in their job; and provides expected feedback where required (Bramley, 2003:33).

3.5.2 High performance teams

A high performance team is a cooperating group of people who have mutual problems and goals and attains the objectives set for them, draws the crucial resources or provides services / products that satisfy stakeholders (Bramley, 2003:27). Such teams satisfy all the team objectives and team members are dedicated to one another's individual growth and achievements (Matveev & Milter, 2004:105). High performance teams are those that extensively surpass regular teams (Matveev & Milter, 2004:105).

High performance teams are characterized by: effective listening; compassion to others needs; allowing individuals to articulate themselves liberally; listening to each other; supportive climate; valuing each other as team members; and team members recognize each other's contribution as important (Fielding, 2006:68). High performance teams are frequently described instinctively in terms of corresponding behaviour (Driskell & Salas, 1992:278).

Many unsuccessful multicultural teams waste resources rather than improve efficiency and generate success (Matveev & Milner, 2004:105). Poor team performance can result from poor group composition, deficiency in essential skills, poor group process and lack of organizational support (Bramley, 2003:33). Anecdotal research advocates that some team members are less cooperatively oriented than others and that the propensity to disregard task inputs from others is a factor that adds to poor performance (Driskell & Salas, 1992:277). Poor performance teams often display a lack of interdependent behaviour (Driskell & Salas, 1992:278).

Schwalbe (2011:370) gives general advice on handling ISD teams so as to guarantee team success:

- 1) Be compassionate and tolerant with team members.
- 2) Repair the problem rather than assigning blame.
- 3) Institute regular, efficient meetings.
- 4) Allow time for teams to go through the basic team-building stages.
- 5) Limit the size of work teams to three to seven members.
- 6) Plan team-building activities for all stakeholders.
- 7) Emphasize team identity.
- 8) Develop team members and promote reciprocal assistance on work.
- 9) Improve work interactions with virtual team members.

3.6 Chapter summary

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. One needs to understand information systems development and information systems development teams in order to address the study's aim. This chapter addresses the study objective 2) to understand information systems development and information system development teams. It does this by providing a theoretical framework for information systems development. It defines the concepts of information systems, information systems development, ISD teams and ISD

team performance. It also discusses the current contributions of other researchers into relevant aspects of this study topic.

Information system is the end product of the information system development. An Information system development is accomplished by following a system development methodology. Teams are often employed to develop large and complex information systems. Effective team performance is essential to develop successful information systems. Research studies highlighted in this study has highlighted how team dynamics affects team performance. An ISD is crucial to enable most organizations to perform tasks faster and easier. A successful ISD team performance is influenced by communication and other team dynamics.

The next chapter provides an understanding into culture and an understanding into communication by defining and describing culture, communication, and intercultural communication. It also refers to some major research contributions relevant to this study. The chapter provides a literature review on intercultural communication and then amalgamates and brings a close to the entire literature review.

CHAPTER 4: INTERCULTURAL COMMUNICATION IN INFORMATION SYSTEM DEVELOPMENT TEAMS

4.1 Introduction

This study aims to gain an understanding on the influence of the intercultural communication on the performance of an ISD team. This chapter addresses two objectives of this study since it provides an understanding into culture and an understanding into communication. It does this by reviewing culture, communication and intercultural communication and then highlights the importance of intercultural communication in information systems development research. It explores the concepts of culture, communication and intercultural communication. It also outlines the importance of this topic, the theories of organizational culture and the important considerations for Information system development. The current contribution of other researchers into this topic is also discussed.

Intercultural communication is the process where large and significant cultural dissimilarities create different interpretations and anticipations about ways of communicating proficiently (Lustig & Koester: 2010:52). Demographic, technological, economic, power and interpersonal concerns has increased the importance of intercultural competence (Lustig & Koester: 2010:3).

The concepts of culture and communication are the theoretical foundations of intercultural communication (Parry & Potgieter, 1996:142). In Figure 4 .1 the shaded areas show the focus of this chapter which is a combination of the specified knowledge areas.

This study combines four knowledge areas of culture, communication, ISD and team dynamics. The areas represented in figure 4 . 1 demonstrate the portion of literature review that this chapter will address shaded in grey. This chapter of the literature review discusses communication and culture and brings together the study's topic of intercultural communication in ISD teams.

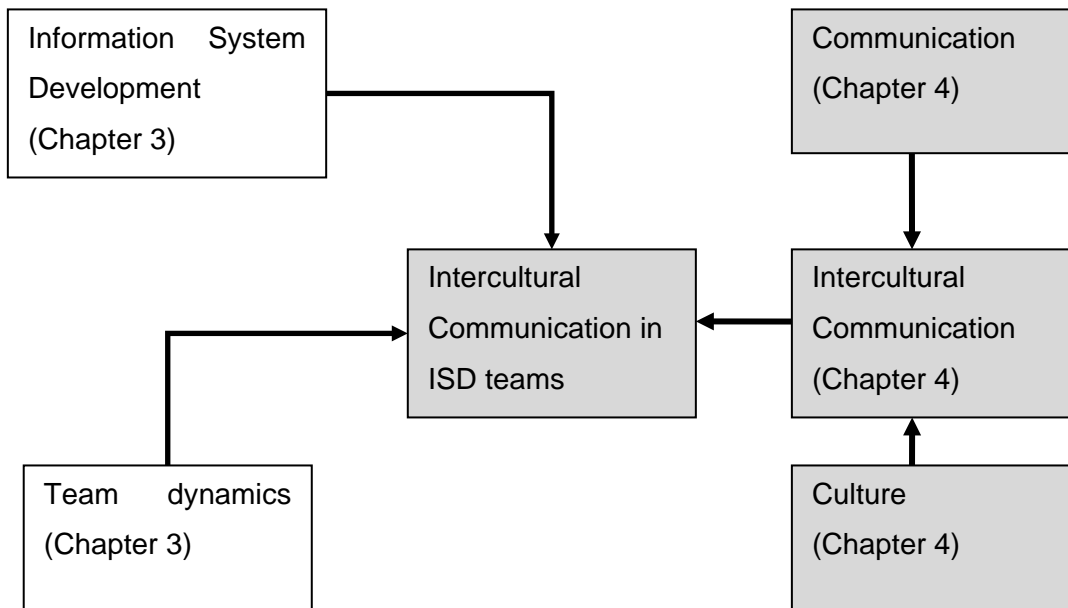


Figure 4 . 1: Intercultural communication in ISD teams

Section 4.2 defines and explains culture, describes the cultural components, explains the different cultural contexts and explains cultural diversity. The section also explains the relationship between culture and information systems, culture, communication and intercultural communication. Section 4.3 defines communication, describes the elements of a communication system in detail. This section makes a distinction between the different types of communication.

Section 4.4 describes small group communication, it starts by defining the importance of small groups in organization; it then defines the characteristics of small group communication; the importance of small group communication; it explains how small group communication is affected by organisational climate; it also examines some case studies of small group communication research.

Section 4.5 discusses intercultural communication in detail. The section starts by relating the culture and communication to intercultural communication. It then describes the barriers to intercultural communication. Some of the theories of intercultural communication are briefly explained.

Section 4.6 and Section 4.7 discusses previous research findings in intercultural communication and information systems. Section 4.7 also attempts to show the importance of this study. Section 4.8 brings the chapter to its conclusion by summarizing some important aspects of the chapter.

4.2 What is culture?

Culture is a learned way of life passed on to group members ((Martin & Nakayama, 2011:296; Jandt, 2004:8). Most people have attained a common culture in early childhood (Hofstede & Hofstede, 2005:4; Shusta, Levine, Harris, Wong & Olson, 1995: 8). National, societal and gender culture attained by young children are deeply entrenched in the human conscious than occupational or organizational cultures (Hofstede, 2012:20). These deeply rooted cultures are extremely opposed to change and tend to endure for generations (McDaniel *et al.*, 2012:15). Schein (1992:12) defines culture as “a pattern of shared basic assumptions that the group has learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems.” Culture refers to the entirety of a people’s socially conveyed products of work and thought (Jandt, 2004:13).

All the cultural elements are learned through interaction with others in the culture (Jandt, 2004:8). These cultural elements are language and gestures, health, transportation and government systems, economic systems, personal appearance and social relationships, religion philosophy and values, courtship, marriage and family customs, food and recreation, work and government, and education and communication systems (Jandt, 2004:10).

Each culture is articulate and whole within itself – it gives a worldview (Beamer & Varner, 2001:4). Members often do not see anything outside their own worldview (Beamer & Varner, 2001:4). Culture is characterized by “a community or population large enough to be self-sustaining, large enough to produce new generations of members” (Jandt, 2004:13). Culture is a view of a group. It is shared by a society. Groups are inspired by similar views; those views are a dynamic force in enabling groups to achieve (Beamer & Varner, 2001:5). The group members have a cultural identity, that is, they consciously acknowledge themselves with the specific culture (Jandt, 2004:13).

People in groups have common symbols e.g. language (Beamer & Varner, 2001:5). Culture categorizes what is imperative as it facilitates the learning of values and priorities (Beamer & Varner, 2001:6). Culture facilitates the process of social transference of thoughts and behaviours erudite from birth through the family and school over generations (Jandt, 2004:13). What is vital to one group may be practically pointless to another. Values trigger attitudes, mould beliefs and drive behaviour (Beamer & Varner, 2001:6). Culture is characterized by the entirety of a group’s thoughts, practices, and behaviour patterns and its perceptions, values and assumptions on life that steer behaviour and evolution through contact with other cultures (Jandt, 2004:13). Culture equips attitudes and states how to behave (Beamer & Varner,

2001:7). Proper social and business conduct depends on cultural orientation (Beamer & Varner, 2001:214).

Cultural identity is an individual's self-image developed from official and casual constituency in groups that convey and instill knowledge, belief systems, values, perceptions, customs, and ways of life (Jameson, 2007:199). It adapts over time and arouses emotions and it is intermingled with power and privilege, influenced by close relationships and facilitated by communication (Jameson, 2007:199).

The uniqueness of people's mental programming is explained in figure 4 . 2. People's mental programming is made up of personality, human nature and culture (Hofstede & Hofstede, 2005:4). Culture is found somewhere between human nature and personality of an individual. Culture is not the same as human nature and an individual's personality (Hofstede & Hofstede, 2005:4). Human nature embodies the common level in one's mental programming, inherited from one's genetic materials (Hofstede & Hofstede, 2005:4). Culture is not a hereditary characteristic, it is a learned set of mental programs (Hofstede & Hofstede, 2005:4; Jandt, 2004:10; Hybels & Weaver, 2004:65; Schein, 1992:12). An individual's personality is a person's unique mental programs, which are partially hereditary and partially learned (Hofstede & Hofstede, 2005:5). Cultural identities of individuals differ in strength and content (Hybels & Weaver, 2004:65).

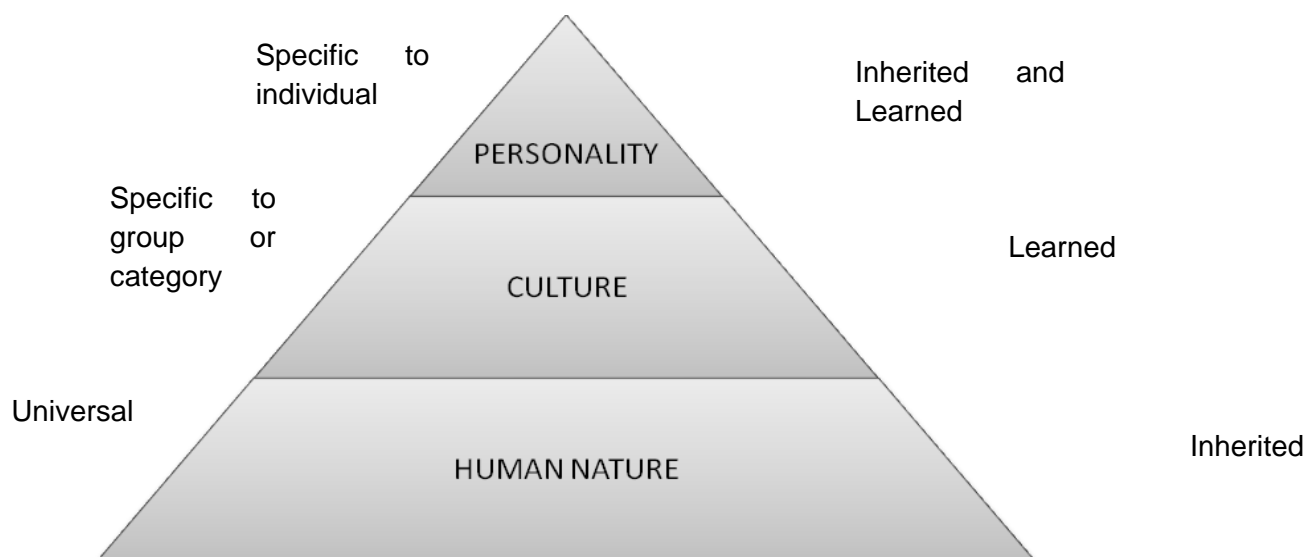


Figure 4 . 2: three levels of uniqueness in human mental programming (Hofstede & Hofstede, 2005:4).

4.2.1 Major components of culture

The components of culture are symbols, values, norms and sanctions, material culture and rituals (Hofstede & Hofstede, 2005:7; Jandt, 2004:7). Culture is a methodical way of creating reality and is articulated and revealed in forms of expression for instance material culture, human activity or behaviour (Lemon, 1996:219). Lustig and Koester (2010:85) refer to these cultural components as cultural patterns. Mutual beliefs, norms, values, and social practices that are constant over a period of time that result in identical behaviours in identical situations are labelled cultural patterns (Lustig & Koester, 2010:85). Cultural patterns cannot be directly seen, heard or experienced but the shared interpretations evident in people's speech and actions can be easily observed (Lustig & Koester, 2010:85).

4.2.1.1 Symbols

Symbols refer to "anything that a group of people have decided upon as a means of significantly representing itself" (Popenoe, Cunningham & Boulton, 1998:27). Symbols transmit a specific meaning which is only well known by persons who share the culture (Hofstede & Hofstede, 2005:7). Symbols facilitate comprehension of reality and convey and store complex messages, e.g. symbols comprise words, numbers, clenched fist, a country's flag and the cross (Popenoe *et al.*, 1998:27). New symbols are easily created and symbols are often replicated from other cultures (Hofstede & Hofstede, 2005:7).

Language is a vital set of symbols as it is flexible and sufficiently precise to convey all the complex nuances and subtleties that humans can comprehend and it permits us to construct and convey culture more than every other symbol set (Popenoe *et al.*, 1998:27). Language is never neutral, because the spoken language is inseparably linked to the history and culture of people who speak it (Balarin, 2006:31). Language grows in the perspective of a specific culture and therefore mirrors that culture (Parry & Potgieter, 1996:155).

Language varies across cultures and also across groups within a society whose constituents speak the same language and these differences in the midst of languages reveal the needs and backgrounds of the speakers and also mould their worldview (Popenoe *et al.*, 1998:27).

What happened during the Soweto uprising in 1976 illustrates the significance of language to South African society (Popenoe *et al.*, 1998:29). Students frustrated by the political system and Bantu education rebelled against the government. The government enforced Afrikaans as a

language of instruction and the students were against this. Afrikaans, at that time, the language of the oppressor, symbolized oppression (Popenoe *et al.*, 1998:30). The energetic way by which defenders of various languages fight for an equitable share of airtime on South African television and radio stations is another example of the importance of language (Popenoe *et al.*, 1998:30).

4.2.1.2 Values

Values refer to a principle shared by members of a society as regards what is beneficial and detrimental, correct or wrong, good and bad (Hofstede & Hofstede, 2005:9; Jandt, 2004:7). They are general conceptual ideals and objectives of a society and examples of values are: honesty, bravery, strength, and loyalty (Popenoe *et al.*, 1998:31). They permit us to assess what is important to us or to apply benchmarks to our beliefs and attitudes (Beamer & Varner, 2001:6), for instance respecting your elders is an important value of African culture (Popenoe *et al.*, 1998:31). Cultural values influence the instinctive filter that a person utilizes to interpret information so as to make decisions (Hofstede & Hofstede, 2005). These differences in perspective offer potential for multicultural teams to perform well (Watson *et al.*, 1993:598).

Values trigger attitudes and mould beliefs (Beamer & Varner, 2001:6). Core values of a culture are imparted through its symbol set and values do not subsist in isolation, rather they relate to each other forming a unifying pattern and they are general and regularly serve as a yardstick for adjudicating norms (Popenoe *et al.*, 1998:31). Values and norms are philosophically determined as a form of social control and they serve the interests of those with social, economic and political power (Lemon, 1996:213). The correlation between values and behaviour is communal (Popenoe *et al.*, 1998:31). Cultural values are easily studied compared to basic assumptions, since basic assumptions are invisible and precognisant (Leidner & Kayworth, 2006:359).

4.2.1.3 Norms

Norms refer to socially acceptable beliefs, conduct, attitudes and perceptions of group members that are expected and mostly demanded from members in particular situations (Hybels & Weaver, 2004:35; Baron & Kerr, 2003:6). Norms can be formalised by writing them down or be informal i.e. commonly known by members (Popenoe *et al.*, 1998:32). Members assume that others understand and will follow the norms (Hybels & Weaver, 2004:351). Norms are important

because they give the group some structure and govern the way group members communicate with one another (Hybels & Weaver, 2004:351).

4.2.1.4 Sanctions

Sanctions refer to how a society imposes its norms and they can be imposed by a formalized group of people in a position of power or informally be imposed by one's friends and peers (Popenoe *et al.*, 1998:32). Professional societies and academic institutions assist in producing shared meanings, utilizing cognitive systems that identify sanctioned ways for executing organizational tasks and evaluating decisions (Nicolaou, 1999:133). It is vital to add that it is undesirable that an individual or group abide by the norms every time, since culture and society must be capable of acclimatizing to changing conditions (Popenoe *et al.*, 1998:32).

4.2.1.5 Material culture

Material culture also known as cultural artefacts refers to the physical items that are characteristically located within a specific society – machines, tools, artefacts, books, and clothing – generated in explicit historical, social and political contexts (Lemon, 1996:212). All material culture conveys and endorses meaning of values, beliefs and ideologies (Lemon, 1996:213).

4.2.1.6 Rituals

Rituals are symbolic behaviours that strengthen the existing belief system within an organization (Robey & Markus, 1984:5). A ritual is a social and periodic phenomenon that illustrates the manner of interaction between persons of a specific culture in order to socialize (Thomson & Hassenkamp, 2008:1776). Rituals reflect the attitudes and conduct of people who are attempting to satisfy their need for people, identity and beliefs in an evolving society (Jackson, 2011:11). Rituals that change over a period of time substantiate that a nation is changing, illustrating greater submissiveness (Jackson, 2011:11). The research by Thomson & Hassenkamp has shown that rituals are utilized by the team to improve group cohesion, rapport, and emotional welfare (Thomson & Hassenkamp, 2008:1797).

4.2.2 Culture theories

Different individuals have different views of culture. Some view culture as equal to race while others view culture as very individual and dynamic. These viewpoints are representative of different cultural theories. The different theories on culture include essentialism, constructivism and neoliberalism.

4.2.2.1 Essentialism

Essentialism maintains that things are as they are because that is their essence, nature or characterization (Fuchs, 2001:3). Essentialism is the view that objects have characteristics that differentiate it from others and represents what they can actually perform (Wilkin, 1999:26). Essentialism assumes uniformity and constancy within a specific class of objects, for instance atoms of the same elements are identical units; an essentialist would treat members of a population similarly (Rodseth, 1998:56).

Essentialists view culture as permanent products rather than dynamic processes (Pfeffer, 1998:1382). It does not recognize the dynamic changing nature of people's identities, which interrelate between religion, class, ethnicity, and many more cultural constituents (Pfeffer, 1998:1383). Essentialism views the concept of culture as similar to the concept of race (Rodseth, 1998:56). Even though there has been some admission of the effect of the contemporary racism on terminology, the terms race, ethnicity and culture are occasionally still used interchangeably in classifying characteristics of research subjects (Pfeffer, 1998:1381).

Each person has a unique assortment of cultural comprehensions and beliefs (Rodseth, 1998:67). Burnham and Harris (2002:192) maintain that people who are different from you are not automatically the same as each other. Martin (1994:646) argues that just as no two persons or circumstances are the same in every respect, no two are different in every respect. She advocates for investigation before essentialism can be disregarded completely since the question that all women have one or more common attributes cannot be answered in advance of investigation.

4.2.2.2 Cultural constructivism

Constructivism is the thought that people construct their own subjective knowledge and demonstrations of knowledge from their own thought and experience (Martin, 2006:178). The constructivists propose that one cannot understand reality independently of one's own constructions and the notion that knowledge about others and the world can be acquired objectively is being seriously and convincingly challenged by scientists (Burnham & Harris, 2002:173).

Constructivists view culture and ethnicity as social constructions (Burnham & Harris, 2002:192). Cultural constructivism argues that individuals gain knowledge particularly well through construction of objects in the environment that articulate their cultural identity and encompass common meaning in their home cultures (Pinkett, 2000:5). Constructive team and group members who have been apparent about their prejudices, thoughts and biases may be more flexible and accessible for invigoration, reconstruction and learning from others (Burnham & Harris, 2002:172).

Knowledge is constructed and this acts as basic guidelines for practitioners considering working with stakeholders from a different ethnic group than themselves (Burnham & Harris, 2002:173). Socially constructed systems of shared meaning contain institutional symbolic elements and these elements facilitate exertion of social control on entities and their processes of decision-making (Nicolaou, 1999:132). Essentialism views culture as something innate whereas constructivists view culture as a social construction.

4.2.2.3 Neoliberalism

Neo-liberalism relies on the premise that the international system is a closed system, the necessary properties of power, state, anarchy, and balance of power can be secluded and comprehended as mainly shaping the effects of conduct in this system in regular and recurring patterns that are not affected by history and culture or any of a host of other factors (Wilkin, 1999:26). Neoliberalism includes economic doctrine as well as advances the restructuring of political society in the name of decentralizing, reducing the state, asserting basic rights and demanding modest practical democracies (Hale, 2005:12).

It generates a new direction in social policy, stressing the development of civil society and social capital and an approach to cultural rights that seems superficially counterintuitive (Hale,

2005:12). It supports the privatization agenda, decreases social reproduction costs for the government and assists in the establishment of courses geared towards individual success in the large-scale economy (Mitchell, 2003:387).

Essentialists view culture as something innate and constant, constructivists view culture as a social construction and neoliberalists view culture as social construction that can be shaped to advance a specific ideology or dogma.

4.2.3 Cultural Contexts

The use of the word culture by interculturalists, mean different culture contexts namely: national culture, corporate culture, professional culture (job position), gender, age, religious culture, regional culture and class culture (Oetzel, 2005:352; Gibson, 2002:8). The different cultural contexts complicate the interpretation of the non-verbal aspects of communication (Beamer & Varner, 2001:160). Hofstede & Hofstede (2005:11) refers to these cultural contexts as layers of culture. They (2005:11) outlines six layers of culture as national level; regional, ethnic, religious and/or linguistic affiliation level; generation level; gender level; social class level and organizational level.

People inescapably carry numerous layers of culture, since everyone belongs to diverse groups and categories of cultures at once (Hofstede & Hofstede, 2005:11). Cultures are hardly ever homogeneous creations as subcultures subsist based on region, religious beliefs, and language (Limon & La France, 2005:126). The mental programs from diverse cultural contexts may be conflicting and this makes it difficult to anticipate an individual's conduct in a new scenario (Hofstede & Hofstede, 2005:11).

4.2.4 Cultural diversity

Cox (2001:3) defines diversity as “the variation of social and cultural identities among people existing together in a defined employment or market setting”. In chapter 1, section 1.1 it is mentioned that cultural diversity is synonymous with multicultural, intercultural and culturally heterogeneous (Oetzel, 2005:352) and in this study they are regarded as synonymous.

The plethora of cultural backgrounds at work exposes assortment of values, work ethics and customs of behaviour ingrained in culture and ethnicity (Jamieson & O'Mara, 1991:22). Multicultural vision advocates respect and appreciation of all cultures (Thomas, 2006:11). Surviving in a multicultural world does not require one to feel, think and act similarly in order to have consensus on practical issues and cooperation (Hofstede & Hofstede, 2005:366).

Cultural diversity can be beneficial. Culture matters because it is a basis of dynamism and creativity (Vershelst & Tyndale, 2002:13; Cox, 2001:7; Cox, 1994:27). Rallying multicultural team members together results in multiple viewpoints and more creative methods to problems and challenges (Matveev & Milter, 2004:105). Most societies have a prevailing problem-solving mechanism that varies from culture to culture (Hybels & Weaver, 2004:350). Cultural diversity in intercultural teams facilitates improved understanding of the different clientele target market (Finestone & Snyman, 2005:137).

Cultural diversity has challenges. Diverse cultural backgrounds have many cultural variables that influence our communication with others and are frequently stumbling blocks to successful communication (Parry & Potgieter, 1995:153). Cultural diversity amid team members can result in many challenges, including conflict, misunderstanding, and poor performance (Matveev & Milter, 2004:105). The chance of a misunderstanding between culturally diverse team members increases when the link between culture and communication is overlooked (Jandt, 2004:46). The classic challenges of cultural diversity include managing heterogeneity, differences and conflicts; handling coordination and control issues; managing geographic dispersion; distances and desolation; maintaining communication affluence and developing and sustaining team cohesion (Matveev & Milter, 2004:105).

4.2.5 Culture and information systems

Visible manifestations of culture are artefacts and creations, and these may include technology (Leidner & Kayworth, 2006:359). Information flows and information technologies are often strongly entwined with culture (Leidner & Kayworth, 2006:358). Technology is one of the major elements of people's identity therefore technology is not free of culture, since it comprises a way of performing things (Ishemo, 2002:35). Culture at organizational, national or subunit level wields a subtle yet powerful influence on people and organizations (Leidner & Kayworth, 2006:358). Information technology (IT) is frequently associated in the weakening of culture as the diverse forms of technology artefacts may influence certain types of cultural value (Leidner & Kayworth, 2006:358).

Information technology experience results in cultural adaptation (Leidner & Kayworth, 2006:370). Information systems have led to better globalization, meaning the augmentation of international business and cultural exchange (Stair & Reynolds, 2012:34). Leidner and Kayworth (2006:370) maintain that information technology (IT) has the potential for application in organizational culture reengineering endeavours. Robey and Markus, (1984:12) maintain that ISD and user participation activities signify organizational rituals symbolizing the fundamental value of rationality that people designate to IT. Information technology is intrinsically symbolic and loaded with values (Leidner & Kayworth, 2006:371).

Information system development requires creativity and dynamism for better-developed products since technological problem solving is open-ended and creative (Hill, 1998:203).

Culture is more valuable if it helps us to explain some of the more apparent incomprehensible and illogical aspects of teams and organizations (Schein, 1992:15). Various communication activities keep organizations operational and provide cultural foundations (Harris & Nelson, 2008:32).

Finestone and Snyman, (2005) performed an exploratory study, using focus groups and comprehensive interviewing, to research the issues that face knowledge managers in the intercultural South African business environment. They (Finestone & Snyman, 2005:136), identified these issues:

- 1) Language. The South African population diversity has resulted in a South Africa comprising of 11 official languages (Finestone & Snyman, 2005:131). Labour unions play a big role in minimizing language difficulties.
- 2) Cultural diversity – Some cultures hamper open sharing of knowledge so as to be competitive. Shared corporate culture serves as a balance for multicultural idiosyncrasies.
- 3) Company structure – roles and job levels at which employees operate sometimes tends to be a problem. Bottom-heavy and top-heavy structures should be avoided.
- 4) Lack of knowledge sharing – sharing is cultural. Sharing knowledge might be viewed as a competitive advantage.
- 5) Lack of management involvement and leadership – knowledge management is often not led by strategic management.
- 6) Conflict resolution mechanisms – mentoring and feedback used to improve internal team processes.
- 7) Technology – often trails behind and leads to failure of knowledge management initiative.

One of their other finding is that the organizations did not acknowledge differences amongst cultures due to major cultural sensitivities and therefore uses organizational culture to form a basis for cultural exchanges (Finestone & Snyman, 2005:128).

4.3 What is communication?

Communication can be defined as the undertaking, by one individual, two or more persons, used to convey and receive messages that are altered by noise, transpiring within a context, that have an effect and afford a chance for feedback (Lowe, 1995:19). The definition outlines the basic components of any communication system, which are source, context, recipient, message, channel, sending or encoding process, noise, receiving or decoding process, feedback and effect (Lowe, 1995:19).

Communication involves conveying and receiving of information between a sender and a recipient and this happens through words and non-verbal actions, such as gestures and facial expression (Jandt, 2004:11). Communication methods between employees differ, but the objective is to achieve effective communication (Beamer & Varner, 2001:129).

The basic components of any communication system are source and recipient, context, sending or encoding process and receiving or decoding process, message, channel, noise, feedback and effect (Lowe, 1995:19). Figure 4 . 3 illustrates how the communication process, happens showing all the basic components of a communication system.

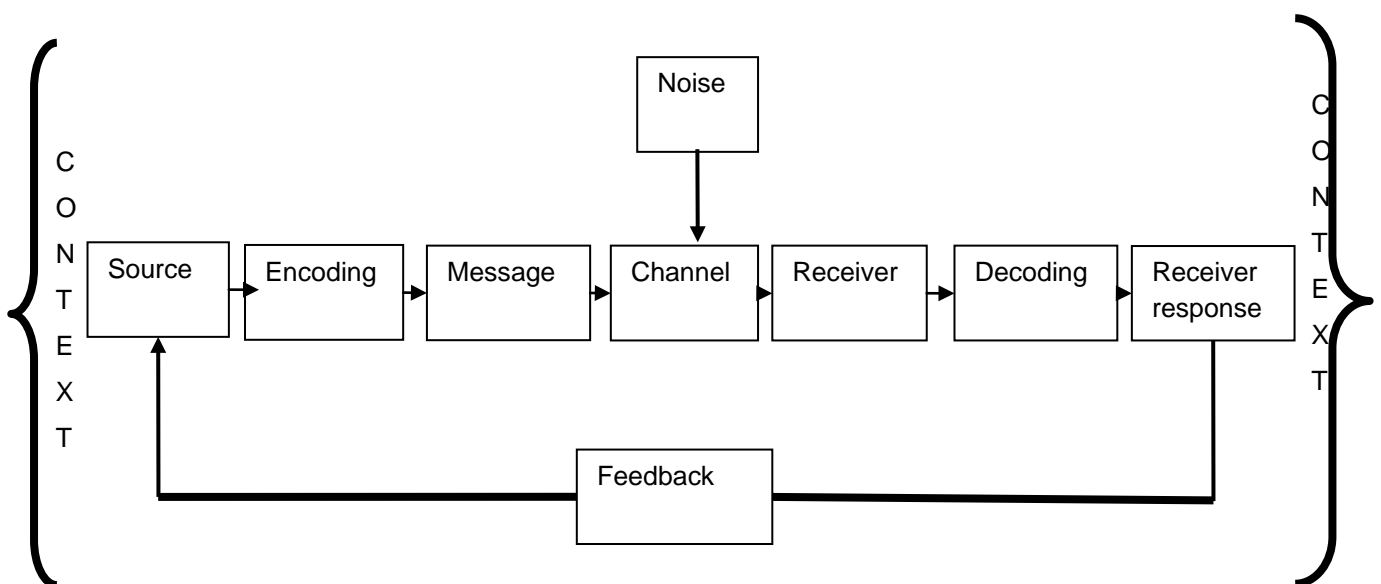


Figure 4 . 3: Ten components of communication (Jandt, 2004:30).

The components of a communication system are discussed in detail in section 4.3.1 to section 4.3.7.

4.3.1 Source and recipient

The source is the person who initiates the communication process (Jandt, 2004:30) and the recipient is person(s) who get the message either intentionally or by stumbling on it (Jandt, 2004:32). Depending on the level of communication the source and the recipient can be the same person. In intrapersonal communication the message emanates and ends with self, hence meaning is from self (Lowe, 1995:43). In interpersonal communication there is at least one source and at least one recipient as communication is among two or more people (Lowe, 1995:43).

4.3.2 Context

Context is the environment where communication occurs that helps define the communication (Jandt, 2004:33). The context can be categorized as physical (place where communication occurs), social relationship (nature of relationship between sender and recipient), cultural (Jandt, 2004:33). It aids the communicator to know the degree to which the source and the recipient have the same meaning for communicated symbols and the same comprehensions of culture where the communication occurs are vital to the success of the communication (Jandt, 2004:33).

4.3.2.1 Levels of communication

The levels of communication occur in different contexts of communication. The two basic levels of communication are intrapersonal communication and interpersonal communication (Steinberg, 1996:102). Intrapersonal communication is communication with self whereas interpersonal communication is communication between two or more people (Lowe, 1995:43).

Intrapersonal communication

Intrapersonal communication refers to how we achieve an understanding of our reality and of ourselves by interpreting messages from the surroundings (Steinberg, 1996:102). It occurs within a human being, i.e. the process of talking to self, e.g. monologue (Lowe, 1995:43). The source and the recipient are the same person. In intrapersonal communication the message emanates and ends with self, hence meaning is from self (Lowe, 1995:43). Intrapersonal communication utilizes four different kinds of cues and they are private cues (internal state of body), public cues (state of weather), behavioural, non-verbal cues (e.g. making signs and gestures) and behavioural, spoken cues (e.g. monologue, composing a poem) (Lowe, 1995:43).

People's beliefs, values, attitudes, choices and abilities develop during intrapersonal communication and these influence their behaviour when interacting with others (Steinberg, 1996:102; Lowe, 1995:44). Intrapersonal communication is responsible for the self-image (Fielding, 2006:26) as it brings to the fore the self-concept, self-consciousness, self-acceptance, and self-actualization (Lowe, 1995:44). Self-image is portrayed to others through non-verbal behaviour in interpersonal communication (Fielding, 2006:26). Intrapersonal communication is the starting point of communication in all other contexts thus transpires in all communication activities (Lowe, 1995:43). It can occur despite other communication contexts but no communication happens without intrapersonal communication (Lowe, 1995:44).

Interpersonal communication

Interpersonal communication is defined as relatively formal or informal social circumstances where people personally maintain attentive interaction through the mutual exchange of verbal and non-verbal signals (Lowe, 1995:45). Communication is more complex in interpersonal communication context because of self-consciousness, awareness of other(s)'s presence, the individual's need for inclusion, the individual's need for control and the individual's need for affection (Lowe, 1995:45). Even before exchange of words occurs first impressions are made of each other based on socio-economic status, outward appearance and behaviour of others (Lowe, 1995:45). Interpersonal communication has three contexts: dyadic communication, group communication and mass communication (Fielding, 2006:25; Steinberg, 1996:102; Lowe, 1995:48).

Dyadic communication is communication between two people only e.g. dialogue (Lowe, 1995:48). Dyadic communication makes it possible for people to obtain cooperation from others and develop harmonized activities in an effort to achieve personal and organizational goals (Steinberg, 1996:102). It requires a blend of intrapersonal communication skills and interpersonal communication skills, i.e. assertiveness, exchange of messages, listening, verbal and non-verbal communication and perception (Steinberg, 1996:102).

Group communication is also known as small group communication to differentiate it from mass or public communication and it consists of three to twenty group members who work together towards a common goal involved in communication acts (Lowe, 1995:48). This study focuses on small group communication between culturally diverse groups. This topic will be discussed in detail in the next section.

Mass communication is the process whereby the source is conveying a message usually to an unfamiliar group or organization using stronger communication channels such as television (Lowe, 1995:49). It is also known as public communication. It involves large audiences, repeated reproduction of messages, and swift delivery of messages (Fielding, 2006:25). Mass communication does not require direct contact between source and recipients, and therefore feedback is belated (Lowe, 1995:49). An instance of mass communication is an advert using communication channels such as newspapers, television or radio (Fielding, 2006:25).

4.3.3 Encoding and decoding messages

Encoding is the process of setting an idea into a code and decoding is the process whereby the recipient assigns meaning to the code obtained (Jandt, 2004:31-2). A code is a system of symbols, made up of both a class of symbols and the regulations controlling their usage, e.g. traffic codes, English, and Setswana (Lowe, 1995:68). Codes allow for personal expression and interpretation as well as social expression and interpretation. Code systems are used to communicate messages for conveying meaning, apportion for interpretation and understanding (Lowe, 1995:68). Code systems regularly used in communication are verbal, non-verbal and pictorial code systems (Lowe, 1995:69).

Verbal code systems use words (e.g. English, Setswana, French, etc.) equally relevant when spoken and written and they are commonly called languages (Lowe, 1995:69). Language is a vital symbol set as reflects cultural values (Beamer & Varner, 2001:33). The effect of perception on our comprehension of reality is demonstrated by language (Harris & Nelson, 2008:108). The utilization of language can influence the final decision made (Harris & Nelson, 2008:109). Our communication with people who talk different languages can simply lead to misinterpretations or imprecise forecasts when we presume that they attach similar meaning to words we do (Parry & Potgieter, 1996:155).

Non-verbal code systems surround and influence all verbal communication (Kreps, 1990:42). Non-verbal communication functions to complement verbal communication, replace words,

express emotions, contradict verbal messages; control interaction and signify status relationships (Galanes *et al.*, 2004:89). Non-verbal communication has these categories: space (proxemics), kinesics (body movements), chronemics (time), paralanguage (non-verbal elements of voice), silence, haptics (touch), clothing and physical appearance, oculosics (eyes), olfactics (smell) and territoriality (Jandt, 2004:129; Gibson, 2002:28). Cultural background, socio-economic background, education, gender, age and personal preference and eccentricity influence non-verbal communication (Beamer & Varner, 2001:160).

4.3.4 The message

A message originates from ideas and emotions that the sender wishes to share with the recipient (Hybels & Weaver, 2004:9). The message classifies the encoded idea (Jandt, 2004:32). It can be in written or oral form. An oral message includes speech, telephone, oral talk, and briefing (Fielding, 2006:13). Written messages include instructions, memos, reports, newsletters, letters, circulars, newspapers (Fielding, 2006:12). Messages can be positive, negative or simply reminders to something (Fielding, 2006:26). The relationship constraints are fundamental anxieties concerning the way in which a message is constructed (Kim, 2005:93).

4.3.5 Channel

A channel is the means through which information or communication travels (Tubbs & Moss, 2008:12). Channels of communication includes sound, sight, radio, touch, television, CDs, DVDs, newspapers, magazines and smell (Hybels & Weaver, 2004:11). The channels of information in organizations are either formal or informal (Steinberg, 1996:103). Formal channel is an authorized channel through which communication exchange occurs and it may be in oral or written format (Steinberg, 1996:103). This includes interviews, personal instructions, bulletin boards, training programs, meetings, media advertising, newsletter, memos and annual reports (Tubbs & Moss, 2008:12). An informal communication channel is an unofficial channel through which exchange of information occurs, for example conversations between employees (Steinberg, 1996:103).

Channels of communication use different forms of communication media to deliver information and messages (Jandt, 2004:31). In interpersonal communication, selection of a particular medium can indicate distinct levels of formality, reverence, familiarity, or relationship hence,

selection of media can itself be considered as communication (Richardson & Smith, 2007:480). More affluent media are more competent in managing more ambivalent messages.

Face-to-face (FtF) communication is the most affluent communication medium, followed by telephone, E-mail, and letters/memos (Richardson & Smith, 2007:482). It allows the team members an opportunity to develop a bond and thereby develop trust and ultimately goal achievement by team members (Thompson, 2004:278). It allows for non-verbal and paraverbal communication which are the keys to developing rapport (Thompson, 2004:278).

Computer-mediated Communication (CMC) is another channel for communication and is refers to the utilization of computers as a means of interacting with others (Galanes *et al.*, 2004:54). It includes electronic bulletin boards, e-mail, chat rooms, "listservs", decision-making software and videoconferencing (Galanes *et al.*, 2004:54). Communication media without visual cues (telephone, E-mail, letter, etc.) frequently is short of contextual nonverbal cues (e.g., room settings, clothes, etc.) or dynamic nonverbal cues (e.g., eye gaze, facial expression, etc.) to exhibit power and status (Richardson & Smith, 2007:483). Selecting the correct communication channel and the correct form of business message is a communication skill (Beamer & Varner, 2001:149).

Flow of information shows the different directions in which information can travel using formal and informal communication channel. In organizations information flow happens vertically (Downward or upward communication), or horizontally (lateral communication) (Steinberg, 1996:106). Downward communication is a top to bottom communication in organizational hierarchy (e.g. from managers to subordinates). Upward communication involves formal communication of subordinates with superiors to give feedback or relay information believed necessary to management (Fielding, 2006:30). Lateral or horizontal communication is a formal communication among people of similar hierarchical level e.g. team members (Steinberg, 1996:106). Grapevine communication is an informal channel of information, which flows vertically or horizontally, employed to scatter rumours and also relay important information (Steinberg, 1996:106).

4.3.6 Noise

Noise is the interference that occurs between sender and recipient that a message experiences and leads to the message being misunderstood or inaccurately interpreted (Hybels & Weaver, 2004:12). This interference comes in three forms: external noise as a result of the

environmental noise, internal noise results from the sender or the receiver's mind e.g. preoccupation with something else and semantic noise which results from reaction to message e.g. booing a speaker with whom you disagree (Hybels & Weaver, 2004:12).

4.3.7 Feedback and effect

Feedback is vital to communication since it allows the participants to witness whether ideas and emotions have been exchanged in the intended way (Hybels & Weaver, 2004:11). Depending on the channel of communication feedback may be instant or delayed. Mass communication does not require direct contact between source and recipients, and therefore feedback is belated (Lowe, 1995:49). Face-to-face communication allows opportunity for instantaneous feedback (Hybels & Weaver, 2004:12).

Effective communication methods inside and outside organizations are responsible for improving quality of services provided by the organization (Balarin, 2006:137). Communication effectiveness is influenced by the choice of communication methods among the participants and their proficiency levels (Chen, Miller, Jiang & Klein, 2005:216).

4.4 Small-group communication

Small-group communication entails three to twenty persons in communication who energetically work collectively to achieve a common goal (Steinberg, 1996:102; Lowe, 1995:48). It involves all aspects of dyadic communication but has the potential for conflict to erupt (Steinberg, 1996:103). The small groups' communication skills include teamwork, leadership, problem solving and decision-making (Steinberg, 1996:103).

4.4.1 Nature of small groups

Small groups are used to best achieve the organizational goals (Steinberg, 1996:102). Small groups are frequently better at decision making than individuals (Hybels & Weaver, 2004:349). Small group are often more effective at problem-solving and analysis (Hybels & Weaver, 2004:350; Steinberg, 1996:102). Most societies have a prevailing problem-solving mechanism

that varies from culture to culture (Hybels & Weaver, 2004:350). Participants in groups learn faster, are able to ask questions and absorb more information (Hybels & Weaver, 2004:350).

All small groups have the following characteristics: cultural values, group norms and group rules (Hybels & Weaver, 2004:350). Research has shown that 70% of human population abides in a collectivist society (Hybels & Weaver, 2004:350). A collectivist society is a society whose allegiances are rooted in family, clan, ethnic group or social class. Decision making and problem solving are most probably to happen within the family or clan (Hybels & Weaver, 2004:350). Norms are vital because they provide the group some structure and rule the way group members communicate with one another (Hybels & Weaver, 2004:351). Some groups have group rules that are formalised and give structured direction for actions (Hybels & Weaver, 2004:351).

Small group communication can be achieved through face-to-face (FtF) or computer mediated communication (CMC) channels (Galanes *et al.*, 2004:54). A small group can conquer space and time limitations by using computers (Galanes *et al.*, 2004:54). Group communication commences before group members exchange verbal messages (Galanes *et al.*, 2004:72). The primary communication method in small groups for exchanging meaning is verbal communication (Galanes *et al.*, 2004:72).

Verbal communication assists in creating stronger relationships among project workers and stakeholders (Schwalbe, 2011:391). No communication channel is ever closed in groups since communication transpires both verbally and non-verbally (Hartley, 1997:128). Schwalbe (2011:391) maintains that 58% of FtF communication in small groups is accomplished through body language, 35% through the style of communication and 7% through the actual content or spoken words. CMCs are more useful for routine information sharing sessions and meetings, the message contents counts more than non-verbal communication and participants concentrate more on what is said (Galanes *et al.*, 2004:56).

4.4.2 Complications of small group communication

Small group communication is complicated by the size of the group, information context, geographic location, personalities of group members and cultural background (Schwalbe, 2011:394). The increase in the number of people partaking in an IS project increases the intricacy of communication since there are more communication channels (Schwalbe, 2011:395). The communication network experiments have proven to be the most influential set

of experiments to show the relationship between communication, structure and group output (Hartley, 1997:127). Centralised communication networks are more efficient than decentralised communication networks (Hartley, 1997:128). Effective small groups are made up of 3 to 13 members (Hybels & Weaver, 2004:356). A group should not be too large so as to allow every member to partake in group dialogues, decisions and actions and it should not be too small such that it is impossible to successfully accomplish the prescribed tasks (Hybels & Weaver, 2004:356).

It is very rare that the recipient interprets the message in the context that it was intended by the source (Schwalbe, 2011:394). The information context is important in communication, particularly when delivering bad news (Schwalbe, 2011:394). Several communication methods and an open communication environment must be provided to ensure correct interpretation of the information context (Schwalbe, 2011:394).

Group members from different countries often find it complicated or impractical to schedule times for synchronous communication and often experience language problems (Schwalbe, 2011:394).

It is vital to comprehend the persons' personal preferences for communication as personality dissimilarities can result in miscommunication with others with a different personality (Schwalbe, 2011:394). The personality variables may also influence the social interactions that occur daily, even those that are branded as conflict-based (Kaushal & Kwantes, 2006:585). Research has found that 75% of IS developers are introverts and this might explain the communication problems between users and developers (Schwalbe, 2011:365).

Cultural characteristics that affect small group communication are worldview, individualism versus collectivism, power distance, uncertainty-avoidance, masculinity versus femininity and high-low culture context (Galanes *et al.*, 2004:114). Some cultures' ways of communicating may be uncomfortable to others from a diverse culture (Schwalbe, 2011:394).

4.4.3 Research on small group communication

Globalization has increased interaction of people from diverse cultural backgrounds and diverse geographic locations (McDaniel *et al.*, 2012:6; Stair & Reynolds, 2012:34; Oetzel, 2005:351; Cox, 1994). Watson *et al.*, (1993) conducted a study over 17 weeks using 36 teams of students to assess the impact of cultural diversity on group processes and problem solving by assessing

group performance on the consecutive sets of complex problem solving tasks of substantial significance essentiality to group members. This was accomplished by comparing interaction process and performance on culturally homogeneous teams and culturally heterogeneous teams and they used teams with a larger level of cultural diversity (white Americans, African Americans, Latino Americans and international) than teams studied previously. They used 6 measures for this study and these were on range of perspectives, problem identification, alternatives generated, quality of solutions, overall performance and group process.

They found that:

- 1) Newly formed heterogeneous groups cannot be expected to solve problems effectively. Homogeneous teams out-performed their heterogeneous counterparts initially (8 weeks in this case). The diverse groups had teething problems because of the disturbances of coping with a high level of cultural diversity.
- 2) Newly formed heterogeneous reported ineffective group process interaction than homogeneous groups. For instance the groups experienced problems in reaching a consensus regarding what is essential, and in functioning together and often had members who attempted to be domineering.
- 3) Both teams performed the same in group processes and overall performance eventually.
- 4) The heterogeneous teams performed better than homogeneous teams in generating alternatives and range of perspectives given time.

Individualism versus collectivism, power distance, uncertainty-avoidance, and masculinity versus femininity represents Hofstede's four-dimensional model of culture differentiating amongst national cultures (Hofstede & Hofstede, 2005:24). Individualism versus collectivism, explains culture based on whether the individuals aim to enhance themselves or the organization or community (Hofstede & Hofstede, 2005:46). Power distance explains culture based on how subordinates revere hierarchical power within the organization, society or community (Hofstede & Hofstede, 2005:46). Uncertainty-avoidance explains culture based on how individuals handle risk avoidance, how they respond to uncertainty, and how they want to control or deal with it (Hofstede & Hofstede, 2005:165). Masculinity versus femininity explains culture based on the equality or lack thereof of people in terms of gender (Hofstede & Hofstede, 2005:156). A fifth dimension long-term or short-term orientation explains culture based on the significance of the future, especially determination and prudence, against the past and present especially tradition, self-esteem and meeting social responsibilities (Hofstede & Hofstede, 2005:210).

High context cultures use fewer words to converse and depend on mutual cultural experience to commune the meaning whereas low context cultures depend on more words to commune

meaning (Popenoe *et al.*, 1998:67). Communalism, polychronic, high-context cultures dictate the African region (Van der Veur, 2003:85). Van der Veur (2003:85) maintains that the worldwide economy and technology will give rise to ever-changes in African cultures in the future.

A person's cultural background and personality will affect all aspects of the conflict process, starting with the objectives considered mismatched, why they are perceived as such, what one selects to do about it, and whether the result is deemed to be adequate or not (Kaushal & Kwantes, 2006:580). According to Kaushal and Kwantes (2006:584) previous research has established that culturally taught values and beliefs are related to conflict behaviours. It is usual in work groups for members to differ and remark on others' ideas (Limon & La France, 2005:126). Culture and personality influences the social interactions that occur daily (Kaushal & Kwantes, 2006:585). Conflict is unavoidable when people work collectively as they probably have different leadership styles, needs and values (Fielding, 2006:80).

Group communication requires a positive organizational climate so that people work well together (Fielding, 2006:25). Organizational climate is influenced by perceived status distinctions among people and these perceived power distinctions are particularly significant in intercultural communication (Kreps, 1990:193). The organizational climate is the internal emotional temperament of the organization derived from how comfortable members feel with the organization and each another (Kreps, 1990:193). He further maintains that organizational climate influences and is influenced by the communication (Kreps, 1990:193).

Planning culture at the strategic levels of the organization makes identifying the significance of strategic systems investment simple (Leidner & Kayworth, 2006:369). Powerful cultural support and deductive frameworks influence the organization members' opinions concerning how easy it is to communicate with other organizational members (Kreps, 1990:196). This study may show how the stance of the organization towards intercultural communication affects ISD teams.

4.5 Intercultural communication

Intercultural communication generally refers to face-to-face communication among culturally diverse people (Jandt, 2004:39). It is a representational, interpretive, transactional, and contextual process in which people from different cultures create shared meaning (Lustig & Koester, 2010:46). Intercultural communication has all components as the basic communication process except for the fact that in intercultural communication the source and the recipient are

from diverse cultures and diverse social and personal environments (Parry & Potgieter, 1996:154). Diverse cultural backgrounds have many cultural variables that influence our communication with others and are often obstacles to successful communication (Parry & Potgieter, 1996:153). The burgeoning research in intercultural workgroup communication has resulted in complex comprehension of how culture and multiculturalism impact group communication process and performance (Oetzel, 2005:352).

4.5.1 Culture, communication and intercultural communication

Beamer and Varner, (2001:xix) outlines manners in which culture influences intercultural communication by influencing:

- Cultural values and language patterns influences the organization of business messages;
- Non-verbal communication;
- Social interactions in a social context that have diverse meaning for every individual and taps on ethics across culture;
- Cultural priorities influence information gathering, decision making and problem solving;
- The application of intercultural communication skills to multicultural business negotiation; and
- Intercultural communication practices in organisation and structure of global firm.

Culture is an important aspect in creating good communication (Jamieson & O'Mara, 1991:84). It manages people's perceptions as it informs them what sensory information is pertinent and therefore results in different cultural interpretations (Jandt, 2004:67). Culture and ethnicity are significant at all times but not essentially obvious (Burnham & Harris, 2002:192). Culture produces communication systems like language and non-verbal communication and these are attached to the practices of culture itself: language is linked to thinking processes and mental learning processes (Beamer & Varner, 2001:20). Knowledge of a certain culture is a necessary component of intercultural communication (Lowe, 1995:83). The important knowledge areas of another culture are belief, value, and attitude systems, social organization, worldview, thought patterns, verbal language and nonverbal language (Lowe, 1995:83).

Intercultural communication occurs when the source, who has different cultural variables, sends a message to a recipient with different cultural variables (Gibson, 2002). These differing cultural variables make communication complex and these includes differing group identity, stereotypes, gender, values, attitudes and prejudices, perception, social background, encoding, decoding, language, worldview and non-verbal communication (Gibson, 2002). Understanding

communication requires comprehension of the person and situation categories, practices and expectations of participants (Young, 1996:27).

Good intercultural communication is a negotiation of meaning, particularly when people from diverse cultures interact face-to-face (Fielding, 2006:490). Intercultural communication is a multidimensional phenomenon that occurs in different contexts i.e. interpersonal, small group, organisational and mass communication contexts (Parry & Potgieter, 1996:154). Intercultural communication skills are essential in organizations because they lead to competence, clearness, conciseness, accuracy, and accountability needed for making the right organizational decisions (Beamer & Varner, 2001:149).

People have particular expectations of the results of their own behaviour as well as explanations of others' behaviours (Cushner & Brislin, 1996:12). According to Cushner and Brislin (1996:11) these expectations result from people's own socialization, which inclines them to a certain worldview. Worldview is central in any culture and it refers to any culture's philosophical view of God, man, nature and the universe (Martin & Nakayama, 2011:44; Fielding, 2006:491; Van Der Veur, 2003:80). Each culture comprises its own a set of concepts and regulations possessed by its members and these govern correct and incorrect behaviour and competent and incompetent communication (Young, 1996:35).

Blacks and whites carry cultural baggage into an environment and their communication acts reflect this diversity (Asante & Davis, 1985:78). Kochmann, (quoted in Asante & Davis, 1985:77) maintains that blacks and white are inclined to allocate different meaning to speech and non-verbal communication acts and this result in communication misunderstandings when they interact.

People's worldview, stemming from their education and experience, influences their comprehension and interpretation of communication (Chen *et al.*, 2005:217). Common reactions to this confrontation of past and present learning include prejudice, stereotyping and discrimination (Cushner & Brislin, 1996:12). Good intercultural communication necessitates the acknowledgement of the worldview of each culture (Fielding, 2006:491).

It is important to understand variable rules of engagement when involved in intercultural interactions (Beamer & Varner, 2001:188). The different rules of engagement include the knowledge of reverence for authority and structuring of messages; power distance, power symbols and authority; assertiveness and mediation; recognition for performance; and hospitality; ethical considerations of intercultural engagement (Beamer & Varner, 2001:188).

4.5.2 Barriers to intercultural communication

Barriers to intercultural communication are high anxiety, assimilation, ethnocentrism, stereotypes and prejudices, different nonverbal and language codes (Jandt, 2004:91; Fielding, 2006:490). Unique communication problems for multicultural people result from culture shock, conflicting values, discrimination and using multiple languages (Jandt, 2004:462).

People participating in intercultural communication are apprehensive and anxious as they experience difficulty in comprehending other people's way of thinking (Fielding, 2006:490).

Assimilation is a form of cultural adjustment where a person abandons his or her own cultural identity in favour of conventional cultural identity (Martin & Nakayama, 2011:296). Experience of racial and ethnic discrimination from work, housing, law enforcement and public settings lessen the importance individuals assign to upholding their own cultural legacy (Martin & Nakayama, 2011:297).

Ethnocentrism refers to people's oblivious belief in the supremacy of their own culture and how they assess all other cultures in terms of their own culture and perceive them as inferior (Fielding, 2006:490; Jandt, 2004:76). Ethnocentric communication designates people as in-group and others as non-natives and does not impart ways of comprehension to them (Grimes & Richard, 2003:11). People experiencing culture shock, usually passes ethnocentric judgment (Jandt, 2004:91).

Cultural stereotyping is the way people behave when they portray people of a particular culture or ethnic group in a certain way (Fielding, 2006:490). In cultural stereotyping each member of the cultural group is classified alike e.g. classifying people as latecomers because of their cultural affiliation (Fielding, 2006:489).

The interpretation of the non-verbal aspects of communication is made difficult by cultural background, socio-economic background, education, gender, age and personal preference (Beamer & Varner, 2001:160). Our communication with people who talk various languages can lead to misinterpretations or imprecise forecasts when we presume that they attach similar meaning to words the way we do (Finestone & Snyman, 2005:131; Parry & Potgieter, 1996:155). The use of different languages for communication in ICT projects can complicate communication and create project risks (Wooding, 2005:69).

Intercultural communication entails a high risk since people possibly will have to renounce strongly believed ideas (Fielding, 2006:490). People participating in intercultural communication could be applying different verbal and non-verbal codes or even if they apply similar codes, they may possibly append different meanings to them (Fielding, 2006:490). Good intercultural communication necessitates that people perceive themselves as being of equal power and status (Fielding, 2006:491).

4.5.2.1 Forms of intercultural communication

Grimes and Richard (2003:11) argue that cultural diversity can be beneficial or disadvantageous to organizations depending on members of the organization's forms of communication. They (2003:12) outline four forms of communication that are used by organizational members in diverse organizations. These communication forms are founded in interaction and are monocultural, ethnocentric, modernistic and cosmopolitan communication. Monocultural communication is a closed form of communication whereby everyone is treated as a native and ways of comprehension are always closed to change (Grimes & Richard, 2003:12).

Ethnocentric communication surmises that in interactions there is us "natives" and them "the non-natives" and ways of comprehension are closed to alteration (Grimes & Richard, 2003:12). Ethnocentric communication is limited by the fact that it allows stereotyping (Grimes & Richard, 2003:12).

Modernistic communication treats everyone as a different "non-native" and ways of understanding are always open to change (Grimes & Richard, 2003:12). Modernistic communicators do not feel strongly attached to any specific group. Their detachment results in feeling less pressure to conform to any norms, values, etc. They gloss over important group differences which results in limitations in interactions (Grimes & Richard, 2003).

Cosmopolitan communication treats everyone as the native and the non-native (Grimes & Richard, 2003:12). Cosmopolitan communicators combine useful elements from each of the other communication forms. They maintain that cosmopolitan communicators are prone to be more creative, sensitive to culture, grounded, team-oriented and conscious of concealed suppositions. This form of communication is more useful to diverse organization because firstly members are able to identify, appreciate and cooperate with each other across differences; secondly majority members feels included (Grimes & Richard, 2003:18). They further suggest that organizations encourage members towards cosmopolitan communication through the use

of change agents, and also by revealing the negative inferences of modernistic and ethnocentric communication (Grimes & Richard, 2003:19).

Success with diversity requires effectiveness from all people in the organization (Thomas, 2006:11). Multicultural vision advocates respect and appreciation of all cultures (Thomas, 2006:11). Although the behaviours that signify respect are different in diverse cultures, all people should know that they are being treated as essential people (Hogan, 2007:49). He maintains that the relevant respect behaviours can be interpreted and achieved by requesting participants to identify what behaviours they perceive as respectful and disrespectful to them (Hogan, 2007:49). Intercultural competence abilities can be learned and encompasses three phases of awareness, knowledge and skills (Hofstede & Hofstede, 2005:358; Matveev & Milter, 2004:110).

4.5.3 Theories of intercultural communication

Young (1996:25) has summarized the numerous diverse positions that intercultural theorists might take into five general theoretical approaches that explain communication and culture. These categories of intercultural communication theories are conservative or traditional hermeneutics; liberal or moderate view; critical hermeneutics; Marxist hermeneutics and postmodern-radical view (Young, 1996:25).

Conservative or traditional hermeneutics are inclined to view communication problems as fairly inconsequential difficulties of cataloguing and coding (Young, 1996:25). These theories deem it possible to preserve intended meaning in interpretive proceedings (Young, 1996:25).

The Liberal or moderate view recognizes that interpretation is innovatively open, meaning is mutually created and dialogue is seen as sharing (Young, 1996:25). Liberals maintain that given time and the right circumstances the listeners begin to understand the speaker's ideas (Young, 1996:25). Liberals see themselves as advocates of working people, the poor, and minorities against business and supporters civil rights for indigenous groups, women, disabled, ethnic minorities and gays and lesbians against repression of government and business (Sargent, 2006:137).

Critical hermeneutics is a view which recognises the ingenuity of interpretation and the competence of meanings to create human identity and existences it also attempts to give a

systematic explanation of strategies for changing this (Young, 1995:26). Critical hermeneutics is “liberal hermeneutics with politics added” (Young, 1996:26).

Marxist theory is relevant towards understanding the basic conditions of the social person that presents raw materials towards cultural practice (McMahon, 1999:196). Marxist-radical critique is seen to be historically objective (Young, 1996:26). It is more concerned with the development of a materialist description of the correlations between the cultural elements of social reality and other attributes and circumstances of human practice (McMahon, 1999:195). Marxists believe that there are unconscious social forces at work especially through the concept of ideology that generate, spread, and efficiently assemble social systems of perverted and false beliefs (Sharrock, Hughes & Martin, 2003:106). Marxism believes that people’s cognizant thoughts are mostly comprised of ideological beliefs that are impressed on their minds and give them an untrue representation of reality (Sharrock *et al.*, 2003:109).

Postmodern-radical hermeneutics include transformative suspicion which successfully criticizes everything, saying a lot that is pessimistic (Young, 1996:26). Postmodernists seek to untangle the process that creates marginality and segregation, and centrality and inclusion (Pfeffer, 1998:1383). Postmodernists distinguish the rigidity and entrenchment expressed by essentialism with the displacement, escape, exile and forced relocations of peoples as countries collapse (Pfeffer, 1998:1384). They recognise that the capacity of country to define a people’s identity is destabilized by globalization which has multiplied the number of heterogeneous people residing in one location and experiencing a sense of belonging to each other (Pfeffer, 1998:1384). Globalization has augmented emphasis on cultural heterogeneity and its effects on social, personal, and organizational processes (Kaushal & Kwantes, 2006:579). Postmodernism encourages researchers to investigate the process that is always incomplete and moulds people’s identity (Pfeffer, 1998:1383). Any endeavour to comprehend a people’s identity must recognize the impact of globalization, new social movements, racialisation and racism (Pfeffer, 1998:1384).

Gudykunst, Lee, Nishida and Ogawa (2005:3) and Wiseman, (1995:2) have identified five categories of theories on intercultural communication (IC) and these are:

- 1) Theories that integrate culture and communication and these include constructivist theory, coordinated management of meaning theory; and cultural communication theory;
- 2) Theories on communication variation across cultures and these include face-negotiation theory (FNT), conversational constraints theory (CCT) and expectancy violations theories (EVT). These theories outline cross-cultural differences in communication using Hofstede’s dimensions of culture (Gudykunst *et al.*, 2005:7).

- 3) Theories focusing on effective outcomes and these include cultural convergence theory; anxiety/uncertainty management theory; effective decision making theory; and integrated theory of interethnic communication. These theories focus on effective communication and effective group decisions (Gudykunst *et al.*, 2005:11).
- 4) Theories focusing on accommodation or adaptation and these include communication accommodation theory; intercultural adaptation theory; and co-cultural theory. These theories focus on how communicators accommodate or adapt to each other (Gudykunst *et al.*, 2005:14).
- 5) Theories focusing on identity negotiation or management and these include cultural identity theory; identity management theory; identity negotiation theory and communication theory of identity. These theories address adaptation of identities, not specific communication behaviours (Gudykunst *et al.*, 2005:17).

4.6 Intercultural communication in information system development

Communication is more difficult when it happens in an intercultural environment, because the source and recipient are in different contexts and share a few symbols (Jandt, 2004:39). Communication is one of the critical success factors in the ISD projects. Many experts agree that failure to communicate is the greatest threat to ISD projects success (Schwalbe, 2011:382). Information systems project communication is made more complex by geographic location and cultural background (Schwalbe, 2011:394). Differences across cultural values may produce contradictory perceptions and approaches in ISD (Leidner & Kayworth, 2006:365).

Integrating the user's familiarity and expertise produces improved solutions; however, IS users frequently take a very narrow and imperfect outlook of the problem to be resolved and overlook the new ways to employ information technology (Chen *et al.*, 2005:216). Communication between information system (IS) experts and IS users must be effective so as to create successful systems (Chen *et al.*, 2005:216).

Alsindi *et al.*, (2004) conducted research aimed to discover the impact of culture and soft issues on the success of ISD innovation. The research argues that the potential for miscommunication rests with the inherent culture clashes between different stakeholders during ISD projects therefore in any ISD project the culture of the organization should be analysed and understood. The research found out that (a) the users want to participate in ISD process; (b) the inability to comprehend the users' (Arabic/Bahrain) cultures was a barrier to successful implementation of IS innovation; (c) Mismatch between professional involvement in the project and the team's

cultural context. They recommend that (a) it is important to understand other IS team members' cultures; (b) training the users in intercultural communication and ISD methods; (c) using a comprehensive case study to advance the results or validate the findings (Alsindi *et al.*, 2004).

A communication failure amid IS users and IS experts has been recognized as one of the reasons for system failure, leading to misinterpretation of user requirements and lower levels of user contentment (Chen *et al.*, 2005:216). Constant clarifications, justifications, translations, and smoothing relationships, result in time delays and costs that cannot be traded-off against scope or quality of the project (Wooding, 2005:72). Communication plan must identify the stakeholders, their communication preferences and communication risks (Wooding, 2005:72). Wooding (2005) attributes the project failure to lack of planning to accommodate the language issues in project management plan.

Diverse cultural backgrounds and the use of different languages for communication in ICT projects can complicate the basic barriers to communication and create explicit project risks that should be managed (Wooding, 2005:69).

Internationally spread teams experience problems establishing precise requirements due to communication intricacies between the clients, users and developers (Wooding, 2005:72). Virtual and co-located teams operate in varying time and space conditions, therefore resulting in differences in the harmonization, tempo, and methods of messaging amid members (Wooding, 2005:72). These affect the choice of communication channels, message contents as well as mutually agreeable artefacts (Sarker & Sahay, 2003:31).

Sarker and Sahay's (2003) paper on understanding virtual team development ventures into providing a framework for virtual teams by employing concepts from the customs of interaction analysis and structuration theory to scrutinize the process by which virtual teams develop over time. The research included 12 teams made up of IS students from two different countries, collaborating in ICT development projects over a period of 14 weeks. The study looked at how teams communicated throughout the development of the project life cycle. The virtual teams were separated by time, space and culture. During the project life cycle of four phases: 1) initiation, 2) exploration, 3) collaboration and 4) culmination and dissolution, half of the teams managed to develop excellent ICT project, 4 teams did not move past exploration stage, one team was stuck in exploration and the other teamed reached the collaboration phase.

They found that:

- 1) Virtual teams do not naturally progress to the next phases and recognized some triggers that are essential though not adequate for transition. For instance teams that progressed to Phase 2 had managed to change their communicative actions with their counterparts from the initial invitation into other communication techniques such as wooing, referencing norms on performance and even asking higher authority to intervene.
- 2) Some teams are able to progress to successful ICT development through strategic use of turn-taking in communication acts and resolving conversational problems, while others did not make it past exploration phase.
- 3) They categorized a number of burgeoning triggers, in the form of micro communication acts within a macro context.

“The macro context that is the virtual team structure must outline:

- The production structure: task focus and task ability and
- The social structure: nature of virtual presence, social responsiveness, nature of goals, and nature of identities.

The modalities of structuration must outline:

- Power – course grades, deadlines, uncertainty regarding evaluation, artefacts of coordinators, structure of project, technical competence, etc.
- Norms – institutional, facilitator-created artefacts, records of team member communications, etc.
- Meanings – past experience, frames of reference (disjoint or shared), interrelation of local and global issues, personal identification with the outcome, lessons for the future, etc.

The communicative action at micro level must outline

- Turn-taking: Definition/negotiation of situation, impression management, exchanging artefacts, use of referential and evocative symbols, requesting or mandating the use of different technologies/techniques
- Dealing with trouble: Problem avoidance and problem repair using disclaimers and alignments.”

The teams that managed to succeed had managed to negotiate the micro communicative actions within a macro context (Sarker & Sahay, 2003:31).

Olson and Olson (2003:55) identified fundamental classes of cultural variations in multicultural ISD teams as team composition and teamwork for both collocated and virtual teams. Other fundamental classes of cultural variations for virtual teams only are real-time groupware and asynchronous groupware.

Multicultural ISD team composition issues are as follows (Olson & Olson, 2003:55).

- Serving on multicultural short term teams - Successful multicultural teams starts with people's feelings on being short-term team members. For example people might feel anxious about being part of a new group.
- Acknowledgment of team members – this deals with how to allocate tasks and ensure trust among team-members. Perception of trust is created from one's abilities or first impressions. For example judging individuals by their dress or posture. Meeting people from different cultures leaves room for astonishment and unacknowledgement.
- Motivation of persons from diverse cultures may occur differently and team inducement systems should consider these values. For example compensating US developers with cash incentives and compensating French developers with time off.

Teamwork explains how activities progress and these includes the planning tendencies, decision making process and content and the desire to assume responsibility (Olson & Olson, 2003:55).

- Planning the work - some cultures give people choices to participate in planning process whereas others plans are politically manoeuvred.
- Decision making – decision making across cultures differ. In other cultures decision making is oriented towards tradition and ancient wisdom whereas in others decision making is material-based (time/cost/quality/scope).
- Argumentation styles vary across cultures. Other cultures gather information and then vote whereas in others team members suppose an authority will decide.
- Conversational content differs across cultures. Some cultures prefer boasting and exaggerating one's accomplishment whereas others prefer being honest and open.
- Conversational flow – distances of communicants from each other is emphasized differently by diverse cultures. Table seating, for example, is important in Japan but not in the US.
- Use of time – in general time has diverse meanings and values. Time is task-driven in individualist cultures and relationship driven in collectivist cultures.

Cultural diversity impacts on real-time groupware through fundamental trust, videoconferencing and audio conferencing, brainstorming and anonymity, decision support systems, speaker identity and time of the day. Cultural difference impacts the effectiveness of asynchronous groupware through distribution of email, and online discussions. The previously discussed topics team composition and teamwork affect the distribution of email. For instance who makes decisions or who take what actions.

Matveev and Milter (2004) conducted research using qualitative interviews, to examine the performance of multicultural teams from an intercultural communication perspective, using American and Russian participants. The research found that intercultural competence is critical

when working on multicultural teams. It also identified the key characteristics for high performance multicultural teams and the challenges of multicultural teams. The characteristics of high performing teams are identified as clearness of team goals, corresponding skills and team members' experience, clear tasks of team roles, higher degree of commitment, supportive team climate, access to technology and cultural sensitivity. The challenges of multicultural teams are identified as ensuring effective communication and coordination, creating relationships, ascertaining transparency, effective team creation, cultural awareness and choosing an appropriate conflict management strategy.

The research also shows that the socializations of participants (Americans and Russians) affect their worldview. Both agreed on characteristics of multicultural teams but gave different rationales for their choice and also ranked the components of intercultural competence (knowledge, skills and personality orientation) differently.

4.7 The importance of research into intercultural communication in information system development teams.

It is important to conduct intercultural communication because the chance of a misunderstanding between culturally diverse team members increases when the link between culture and communication is overlooked (Jandt, 2004:46). The workforce is changing to include geriatrics, more women, ethnic diversity, people with disabilities, highly educated people and semi-literate persons and employee values are growing to be more personal and more different (Jamieson & O'Mara, 1991:22).

Leidner and Kayworth (2006:366) have recommended a research into understanding how value disparities in heterogeneous software development teams might affect the system development process and consequent development results. They also maintain that the researchers need to reflect on how heterogeneous teams might resolve contradictory value orientation to participate in effective software development practices. The plethora of cultural backgrounds at work exposes assortment of values, work ethics and customs of behaviour ingrained in culture and ethnicity (Jamieson & O'Mara, 1991:22). This could be a challenge to ISD teams. The research aims to study how teams communicate within these diverse cultures and work towards ISD project success.

During Balarin's (2006:118) study into communication strategies in management (conducted at a South African university), she found out that knowledge of diverse cultures and even portions

of language aids in facilitating good communication. As part of her recommendations, she recommends researching into intercultural communication since this was outside the scope of her study (2006:152). Previous studies on ISD risks try to identify critical success factors (CSF) only and do not study the relationship between CSF and team performance (Jiang *et al.*, 2000:19). This study is different in that it attempts to aims to discover how one of CSF: communication affects multicultural ISD team performance.

Intercultural communication may affect how ISD teams communicate. Most studies on intercultural communications have focused on intercultural communication among team members from different international cultures. This study wants to study the effects of intercultural communication on ISD team performance which consists of team members of the same nationality.

4.8 Chapter summary

This chapter has addressed two objectives of this study since it has provided an understanding into culture and an understanding into communication. The two concepts culture and communication are embedded at the centre of intercultural communication, and it is futile to attempt to define intercultural communication without defining these first. Culture is essential since it is formed when one is still young and it affects one's worldview, as Hofstede and Hofstede (2005:4) terms it "mental programming" or "software of the mind". Different theories on culture show different pictures of how to view culture, essentialist, neo-liberal or constructivist.

Communication facilitates the exchange of messages and enables effective problem-solving and decision-making. It is characterized by the source / recipient, encoding and decoding process, message, context, channel, noise and feedback and all these affect effective interpretation of the message and therefore effective communication. Small group communication is used in ISD teams and can be easy or complicated depending on amongst other things on the size of the team.

The next chapter, chapter 5, deals with the research questions. It starts by presenting the research design and applying it to the research study; interview questions will be developed and interviews conducted. Chapter 4 has assisted with relevant information to be included in the interviews towards understanding culture and communication. It has also discussed the relevant research findings that were available at the time in intercultural communication in information

system development teams. It forms the foundations of the questions to be asked. Chapter 5 also presents the study's findings and interprets and discusses them.

CHAPTER 5: IMPACT OF INTERCULTURAL COMMUNICATION IN INFORMATION SYSTEM DEVELOPMENT TEAMS: THE CASE STUDY AND RESULTS.

5.1 Introduction

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. In order to achieve this aim one needs to understand information systems research and to justify the selection of the chosen research methodology; understand information systems development and ISD teams; understand culture and communication; understand what impacts communication has between different cultures; discover how cultural misunderstandings impact upon ISD team performance and discover the steps taken to eliminate miscommunication due to cultural issues in organizations. After the literature reviews of the previous chapters, this chapter addresses these objectives empirically, by reporting on the case study conducted. This chapter presents the interview questions and the data collection and reports on data analysis and interpretation.

Section 5.2 describes the multiple case studies. Section 5.2.1 presents the study participants. Section 5.2.2 presents the interview objectives. Section 5.2.3 presents the interview questions. The interview questions were subdivided into six dimensions and these are personal background, culture, communication, ISD, ISD teams and ISD team performance. Section 5.3 presents the data analysis and the discussion thereof. Section 5.3.1 analyses the question on the personal background of the participants. Section 5.3.2 responds to the question what is culture. Section 5.3.3 responds to the question how is communication affected by different cultural contexts. Section 5.3.4 responds to the question what is the understanding on ISD. Section 5.3.5 responds to the question what is the effect of intercultural communication upon ISD team performance. Section 5.3.6 responds to the question what is the effect of intercultural communication upon ISD team dynamics. Section 5.4 brings this chapter to its conclusion by summarizing the chapter.

5.2 The case studies

The study was conducted using an interpretive, multiple case study and employed the interview technique to gather data. Each participant was interviewed by a dyad for approximately fifty minutes each. Appendix B shows the list of questions that were asked to the participants. The interview questions were subdivided into six dimensions and these are personal background, culture, communication, ISD, ISD teams and ISD team performance. The questions were motivated by the literature review. This case study report describes the profiles of the three organizations that participated in the study, the participants, the interview objectives, questions preparation, implementation, documentation and evaluation.

5.2.1 Participating organizations

Three case studies have been conducted in different organizations that have a strong contingent of ISD developers (business analysts, project leaders, and programmers) who work together. In all the organizations the medium of communication is English. All the participants were fluent in English. To ensure confidentiality the names of the organizations are provided as organization A, organization B and organization C. The working environment of the participants was observed where permissible and the first impression of the working conditions is given as part of this discussion.

Organization A is a banking and financial institution with a large information system department. The developers use a statistical program, SAS, to produce the results that are required by the users. The developers work in a common area separated by cubicle desks. Employees can easily cooperate and communicate with one another.

Organization B is a research institute with a large ISD contingent. The organization specializes in developing both hardware and software for communities, government and other interested parties. All participants worked from their offices but younger employees share offices with one or more colleagues (young too). The working environment is relaxed. Diverse employees associate freely with one another even during lunchtime.

Organization C is a credit bureau with an ISD team of approximately 20 members. The team works in an open plan office. The environment seems very work-oriented. The ISD team is made mostly of young people (< 40 years).

5.2.2 Study participants

The participating employees are members of information system development teams in three organizations in the Gauteng province of South Africa. From each organization five participants from diverse cultural backgrounds were interviewed for approximately fifty minutes each. The participants had cultural diversity in terms of race, gender, religion, age, job description and home language. Participants had experience in a multicultural ISD team context and some had worked in a homogeneous environment as well.

The characteristics of the participants are represented in table 5 - 1 through table 5 - 7. These tables show the diversity of the participants. Table 5 - 7 also includes an assigned identification code used to identify the specific individual in the analysis process. The participants were chosen by respective managers from the participating organizations.

Table 5 - 1: Participants' race

Blacks	Whites	Indians	Coloureds
4	5	4	2

Table 5 - 2: participants' gender

Males	Females
8	7

Table 5 - 3: Participants' religion

Christians	Agnostics	Atheists	Hindu	Hare Krishna	Spiritual
9	1	2	1	1	1

Table 5 - 4: Participants' age

<30 years	30-40 years	>40 years
9	3	3

Table 5 - 5: Participants' Job Description

Developers	Business analysts	Data modeller	Resource manager	*Team manager developer /analyst
8	3	1	1	2

* Two participants had dual roles: team manager and developer or analyst.

Table 5 - 6: Participants' Home language

Afrikaans	English	Indian	Setswana	Zulu	Venda	Other
4	3	3	1	1	1	2

Participants spoke diverse languages at home and all spoke mainly English at work. Only 3 participants were English first language speakers.

Table 5 - 7: Participants personal characteristics matrix

Participant identification code	Organization	Job description	Race	Age group	Gender
AF	A	Developer	White	<30	F
AL	A	Developer	Coloured	30-40	M
AMO	A	Data modeller	Indian	>40	M
AMA	A	Resource manager	Black	<30	F
AP	A	Developer	Black	<30	M
BG	B	Developer	Indian	<30	M
BE	B	Developer	White	>40	F
BGU	B	Team manager / analyst	Black	<30	F
BJ	B	Developer	White	>40	M
BA	B	Team manager / developer	Indian	<30	F
CMO	C	Business analyst	Black	<30	M
CRU	C	Business analyst	Indian	<30	F
CD	C	Developer	Coloured	<30	M
CM	C	Business analyst	White	30-40	F
CRA	C	Developer	White	30-40	M

5.2.3 Interview objectives

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. The interview questions should address this aim. The objectives of the interview were guided by

literature review and the research and questions objectives presented in chapters 1, 3 and 4. The research questions that the case study aimed to answer are as follows:

1. What is the understanding on ISD and ISD team dynamics?
2. What is culture?
3. What is communication?
4. How is communication affected by different cultural contexts?
5. How do cultural misunderstandings impact upon ISD team performance?
6. What are the steps taken to eliminate miscommunication due to cultural issues in organizations?

As a result of these, the objectives of the interview was to investigate the understanding of participants on what culture is, communication, ISD and ISD teams; investigate the different views on culture; understand the effects of team dynamics on communication between diverse cultures; investigate the impact of cultural misunderstandings on the ISD team performance; and discover how teams deal with cultural issues affecting communication.

5.2.4 Interview questions

This section divides the questions into six sections for different questions on personal background, culture (including views on culture, cultural context and intercultural communication and religion), communication, information system development (ISD), ISD teams and ISD team performance.

Table 5 - 8 defines all the major sections that form the basis of interview questions. All the interview questions are provided in Appendix B and also as part of analysis in section 5.3.

Table 5 - 8: Definitions of the sections of the interview questions

Interview questions sections	Definition / Justification
Personal background	People's own socialization, inclines them to a certain worldview (Cushner and Brislin, 1996:11). People's worldview, stemming from their education and experience, influences their comprehension and interpretation of communication (Chen <i>et al.</i> , 2005:217).
Culture	Culture is "a pattern of shared basic assumptions that the group has

Interview questions sections	Definition / Justification
	learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems.” (Schein, 1992:12).
Cultural context	Different layers of culture that individual carry namely: national culture, corporate culture, professional culture (job position), gender, age, religious culture, regional culture and class culture (Oetzel, 2005:352; Hofstede & Hofstede, 2005:11; Gibson, 2000:8).
Communication	Communication is defined as the undertaking, by one, two or more persons, of conveying and receiving messages that are altered by noise, transpiring within a context, have effect and afford a chance for feedback (Lowe, 1995:19).
Information system development	An ISD is a way of conceiving, analyzing, designing, and implementing information systems (Avison & Fitzgerald, 2006:23).
ISD teams	An ISD team concerns itself with daily IS development and includes analysts, programmers, and users (Avison & Fitzgerald, 2006:14).
ISD team performance	A high performance team is regarded as a cooperating group of people who have mutual problems and goals and attains the objectives set for them, draws the crucial resources or provides services / products which satisfy that satisfy stakeholders (Bramley, 2003:27).

5.2.4.1 Questions on personal background

These questions aim to provide an understanding on a person’s socialization and therefore their worldview or culture prior to joining the organization and they also aim to understand if they have changed as a result of being members of a multicultural team.

5.2.4.2 Questions on culture

These questions attempt to discover how cultural background affects employees when they do their job and the extent to which the participants are aware of their own culture. They further investigate how members were affected by participation in homogeneous and heterogeneous

teams. Experience in different multicultural teams may be more valuable when answering the interview questions. These questions also aim to understand how the teams were affected by cultural disagreements. Cultural contexts such as gender, organizational, ethnic and religious culture affect team members' interactions with one another, thereby intercultural communication, is investigated.

5.2.4.3 Questions on communication

As indicated in chapters 3 and 4, communication is one of the essential characteristics of teams. This set of questions aims to understand how team members communicate with one another. They also investigate how communication is affected by the different cultural levels – gender, age, class, job description, skills and technological experiences – of the communicator and the recipient. The participants' preferred communication medium and verbal communication were investigated.

5.2.4.4 Questions on information systems development

These questions investigate the ISD methodologies utilized by the team and the participants' understanding of those methodologies.

5.2.4.5 Questions on information systems development team performance

These questions aim to understand how performance of a diverse ISD team is affected by intercultural communication between team members. They investigate how culture influences the performance of the participants. They aim to discover how individuals view their own performance towards the team performance as well. The way in which individuals deal with non-performing team members and cultural conflicts to ensure positive team performance was also investigated.

5.2.4.6 Questions on information systems development team dynamics

These questions aim to investigate the team characteristics that the participants have experienced in ISD teams. An investigation into how culture and personality are determinants of one's behaviour was conducted as well.

5.2.5 Preparation for the interview

The first step in preparing for the interview was to make an arrangement with organizations so that the interviews may be conducted. Personal requests were made with industry contacts. A lot of emails were written, and phone calls were made to many managers and directors of different companies with a sizable ISD contingent to request permission to conduct the study in their companies. A brief door-to-door stint was also tried, not yielding much success. At the end, all the companies that agreed to give us an opportunity to do a case study did so because of personal relationships with members of the organization who convinced the managers to give us an opportunity.

Once the organization of the case study was secured the managers chose the participants of the study based on their cultural diversity in terms of ethnicity, religion, gender, job description, home language and age as requested in Appendix A. He/she set up a time-table as to the succession of the participants and the times they would participate. The selection of participants by the manager was a limitation to the study. The limitations are discussed in detail in section 6.3. The managers also booked the venues e.g. a small board room where the interviews would be held. The researchers provided a laptop and recording devices (Microphone that can be attached to a laptop). The software Windows Movie Maker and Nero SoundTrax were chosen to be used to record the interviews.

5.2.6 Conducting the interviews

A multicultural team of two people conducted the interviews to improve the reliability of the study results. Non-verbal communication is cultural and therefore the interpretation of intercultural communication is cultural. A multicultural team turned out to be an advantage for the researchers as it minimized racial bias from participants.

Each interview was started with a brief introduction of the interviewer team members, an explanation of who the team members were and the objectives of the interview. The interviewing dyad asked the participant questions interchangeably. The semi-structured interview questions were used as a basis for the interview but not rigidly followed, e.g. if a participant answers a question before it is asked there was no need to answer the question again; or elaboration or follow-up questions were also asked. The participants were thanked for their contribution and time at the end of the interview.

5.2.7 Documentation and evaluation of the interview

The interviews were documented using Microsoft Office Word and saved as a text format so that it can be used with Atlas.ti. The services of a transcriber were used to document the interviews. The interviews were listened to via Windows Media Player or Nero Showtime and then typed into MS Word. The researcher checked the transcription.

5.3 Data analysis and interpretation

This section provides the data analysis. It is necessary to provide a list of abbreviations used in most tables in this section for specific cultures at this point.

Abbreviation	Full name
AC	Afrikaans Culture
BC	Black Culture
CC	Coloured Culture
GC	German Culture
IC	Indian Culture
II	Indians from India
OC	Organizational Culture
SAC	South African Culture
VC	Venda Culture
WC	White Culture
ZC	Zulu Culture

The main data analysis method corresponds with the coding strategies of content analysis. The data analysis went through several phases and iterations of coding and revision. The data was analyzed and presented here in four phases:

In phase one, the data was coded for each participant to get to the core of the data and find themes and categories using Atlas.ti. Figure 5 . 1 presents an excerpt of the Atlas.ti software.

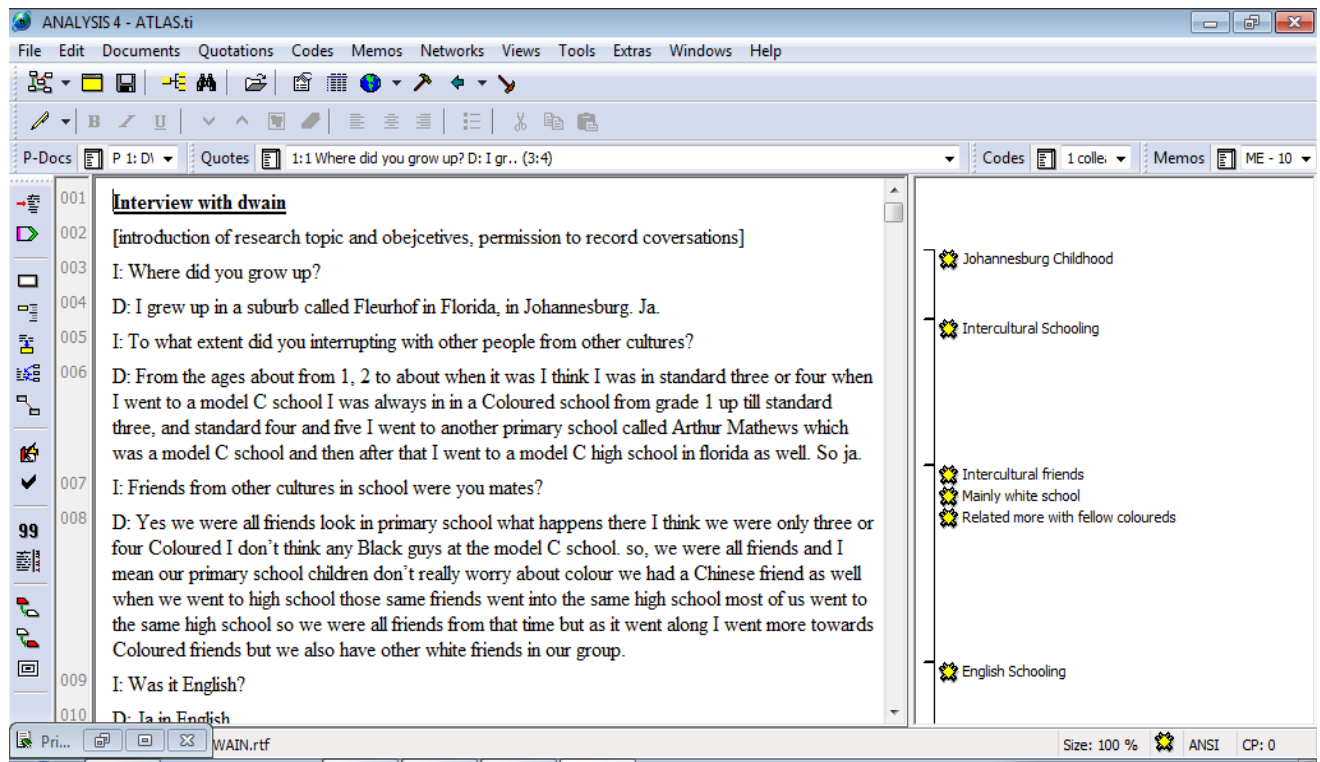


Figure 5 . 1: An excerpt from atlas.ti

This process of data coding was repeated after a month. The disparities within the categories and codes were encountered and corrected. For instance a code may exist “English is the business language” for one participant and for another participant it may be “Business language is English” or “English is business language” for yet another participant. These are essentially the same code and in such instances, where codes were synonymous, the wording of the code would be made uniform. After the second iteration new codes emerged from the data again. The coding went through a third iteration again after a month.

A table was created in a spreadsheet containing the all the interview questions, as listed in Appendix B, and the responses by each participant. The questions were subdivided into sections of interview questions (as specified in section 5.2.4) e.g. a section of questions is “questions on culture?” The responses by each participant were grouped together by organization. This table is too large to be included in this dissertation). Table 5 – 9 is a short excerpt from this table.

Table 5 - 9: An excerpt from the ICC analysis excel table

INTERVIEW QUESTIONS	ORGANIZATION A				
	AF	AL	AMO	AMA	AP
2.1. What type of school did you attend?	- Afrikaans school - Intercultural schooling	Intercultural schooling	Homogeneous schooling - Homogeneous schooling forced	- Multicultural experiences - Intercultural schooling	Homogeneous schooling
2.2. Do you have friends from other cultures?	- Indian friends - Black friends - Europeans friends - Intercultural friends	- Intercultural friends - Black friends - white friends - Unaware of cultural classification	Intercultural friends	- White friends - Intercultural relationship	- Coloured friends - White friends
INTERVIEW QUESTIONS	ORGANIZATION B				
	BG	BE	BGU	BJ	BA
2.1. What type of school did you attend?	Intercultural Schooling	- German public school - Homogeneous schooling	- Homogeneous schooling	- Homogeneous schooling	- public schooling - intercultural schooling
2.2. Do you have friends from other cultures?	- African foreigners friends - Burmese friend - Chinese acquaintance - Indian friends	- International friends	- African foreigners friends - Coloured friends - White colleagues not friends	- Indian friends	- intercultural friends
INTERVIEW QUESTIONS	ORGANIZATION C				
	CMO	CRU	CD	CM	CR
2.1. What type of school did you attend?	- Intercultural Schooling	- Homogeneous schooling	- Intercultural Schooling	- Intercultural schooling - Homogeneous schooling initially	- Homogeneous schooling
2.2. Do you have friends from other cultures?	- Indian friends - African friends - Intercultural friends	- French boyfriend - African friends - Intercultural relationship	- Intercultural friends	- Multicultural work friends - African friends - Coloured friends - Indian friends	

During phase two, tables with the questions and codes from the first table were created for each section of questions e.g. a section of questions is “What is culture?” Some sections of questions have been divided into subsections where necessary. These tables contain questions, categories, codes and count for sections of answers given by participants.

These phase two tables are given in Appendix D as table D – 1 through to D – 8. Table 5 – 10 below is an excerpt of one of the tables. It is important to note the count column. Count is the number of participants whose partial answer was in correspondence with a specific code. The way that the count is presented shows the number of participant(s) and their organization. For instance 2B means 2 participants from organization B and 1A means 1 participant from organization A. The questions presented in Appendix B and in Appendix D are not exactly the same. Not all questions have the same number of responses due to time constraints during the interviews. Some of the questions from Appendix B and phase 1 spreadsheet were combined based on the answers from the participants. Question 11 in section 5.3.2.1 is an example of 2 questions that were combined.

Table 5 - 10: An excerpt from appendix D

Question	Categories, Codes and Count	
2.1. What type of school did you attend?	Category 2.1-1: Schooling social setting	
	Code	Count
	<ul style="list-style-type: none"> • Homogeneous schooling • Intercultural schooling • Homogeneous schooling initially 	2A, 2B, 3C 3A, 2B, 3C 1C
2.2. Do you have friends from other cultures?	Category 2.2-1: White participants' friends	
	Code	Count
	<ul style="list-style-type: none"> • Indian friends • Black friends • International friends • Coloured friends 	1A, 1B 1A, 1C 1A, 1B 1C
	Category 2.2-2: Black participants' friends	
	Code	Count
	<ul style="list-style-type: none"> • White friends • Coloured friends • Indian friends • Other African friends • Intercultural relationship 	2A 1A, 1B 1C 1B 1A
	Category 2.2-3: Coloured participants' friends	
	Code	Count
	<ul style="list-style-type: none"> • Intercultural friends 	1A, 1C
	Category 2.2-4: Indian participants' friends	
	Code	Count
	<ul style="list-style-type: none"> • Black friends • African foreigners friends • Asian friends • Intercultural friends 	1C 1B 1B 1A

Question	Categories, Codes and Count	
	<ul style="list-style-type: none"> Intercultural relationship 	1C

During phase three, the codes were studied in correspondence with the tables created in phase one and phase 2 to identify categories that support the main arguments of the individual participants. This process could not be done the same for all the questions as the type of answers did not allow a single process to be followed. Three types of questions emerged from this phase: type 1, type 2 and type 3 questions. These questions types are explained extensively hereafter.

Type 1 data

These are questions where categories could be created for different viewpoints from what participants answered. Each participant's overall view could be categorized and the total for the respective categories matched the total participants. The detail codes resulting from phase two provide richness to the data. Table 5 – 11 provides an excerpt from type 1 questions. Most of questions were analyzed using this method.

Table 5 - 11: An excerpt for type 1 questions

Question	Question type	Category	Count
18. Do you know religious orientation of team members?	1	Category 21-1: Some team members' religious orientation known	3A, 5B, 5C
		Category 21-2: Question not asked	2A
21.1 Do you react to it?	1	Category 21.1-1: Reaction to religious orientation	3A, 1B
		Category 21.1-2: No reaction to religious orientation	1A, 4B, 2C
		Category 21.1-3: Question not asked	1A, 3C
19. Do your religious beliefs affect the way you do your job?	1	Category 22-1: Influence of religion on work	3A, 2B, 4C
		Category 22-2: No influence of religion on work	2A, 3B, 1C
20. Do your religious beliefs affect the way relate to your teammates?	1	Category 23-1: Influence of religion on relationships	4A, 1B, 3C
		Category 23-1: No influence of religion on relationships	1A, 4B, 2C

Type 2 data

Some of the questions provided such diverse answers from specific participants that the categories are not mutually exclusive. This implies that a specific participant's answer could be coded and categorized in two different categories. Table 5 – 12 the categories table (phase 3) for such a question. It presents two examples of type 2 of questions.

Table 5 - 12: An excerpt of type 2 questions

Question	Question Type	Category	Count
2.1. What type of school did you attend?	2	Category 2.1-1: Homogeneous schooling	2A, 2B, 3C
		Category 2.1-2: Intercultural schooling	3A, 2B, 3C
27. Do you use the same language when communicating to your colleagues?	2	Category 27-1: Same language in communication	4A, 5B, 3C
		Category 27-2: Different language with some colleagues	3A, 2B, 2C

Table 5 – 13 provides the corresponding codes table (phase 2) for question 27 (in Table 5 - 12) from table D – 5 in Appendix D. The corresponding answer for question 2.1 was provided in table 5 - 10 when explaining phase 2.

Table 5 - 13: Another excerpt from type 2 questions.

Questions	Categories, codes and count	
27. Do you use the same language when communicating to your colleagues?	Category 27-1: Same language in communication	
	Code	Count
	• English business language	4A, 5B, 3C
	• Homogeneous language makes communication easier	1A, 2B, 2C
	• English spoken to all at work	1A, 1B, 1C
	Category 27-2: Different language with some colleagues	
	Code	Count
	• Different language with individuals	3A, 2B, 1C
• Afrikaans is spoken with individuals	1A, 2C	
• Ethnic language used with same ethnicity colleagues	2A	
• English used with other ethnicities	1A	
• Enjoys communication with a fellow Zulu	1B	

Care was taken to keep track of specific answers of individuals in order to manage the number in the count column. The number in the count column represents the number of people from a specific organization who gave an answer categorized in a specific category – not the number of phrases. If one participant repeated the same idea over and over it was counted only once. The main difference between type 1 and type 2 questions is that the count numbers of type 1 questions match the total number of participants whereas the count number of type 2 typically exceeds the total number of participants.

Type 3 data

Some of the questions provided even more diverse answers that could not be categorized. These were in most instances the more sensitive questions probing the personal view of the participant on ethnic issues. An example of the phase two table for questions 10 and 12 is given in Table 5 - 14.

Table 5 - 14: Excerpts from type 3 questions

Question	Question Type	Category	Count
10. What do you understand by the concept of culture?	3	Category 10: Defines culture	5A, 5B, 5C
		Codes	Count
		<ul style="list-style-type: none"> • Culture is traditions • Culture is value influence • Culture is upbringing influence • Culture is belief system • Culture is societal creation • Culture is background • Culture is language-based • Culture is environmental influence • Culture is learned way • Culture is way of working • Culture is way of life • Culture is perception of life • Culture is artefact-laden 	3A, 2B, 2C 4A, 1B, 1C 3A, 1B, 1C 1A, 1B, 3C 2B, 2C 3A, 2C 1A, 1B, 1C 2B, 1C 1B, 1C 1A, 1C 1A, 1C 1A, 1B 2C
		Category 12-1: Western culture	1A, 2B, 2C
		Codes	Count
		<ul style="list-style-type: none"> • German Culture (GC) technically intelligent • GC perfectionist • Various individual answers 	1B,1C 1B,1C See table D - 2
		Category 12-2: African culture	2A, 1B, 1C
		Codes	Count
		<ul style="list-style-type: none"> • Various individual answers 	See table D - 2
		Category 12-3: Indian culture	1A, 2B, 1C
		Codes	Count
<ul style="list-style-type: none"> • Respect vegetarianism • IC family-centred • IC extended family-centred • Various individual answers 	1A, 1B 1B, 1C 1B, 1C See table D - 2		
Category 12-4: Coloured culture	1A, 1C		
Codes	Count		
<ul style="list-style-type: none"> • CC Accept people's viewpoints • Various individual answers 	1A, 1C See table D - 2		

For some of these questions of this type of data it was interesting to categorize the data in terms of the ethnic group of the participant interviewed. During this third phase tables were created with the categories according to the ethnic group of the participants. The codes that were representative of more than one participant are provided in the main text and all views are provided in the detail tables in Appendix D, Table 5 - 14 provides such an example. Table 5 -15 is a corresponding excerpt table from table D – 1 in Appendix D.

Table 5 - 15: A corresponding excerpt for type 3 tables.

Questions	Categories, codes and count	
10. What do you understand by the concept of culture?	Category 10: Defines culture	
	Codes	Count
	• Culture is traditions	3A, 2B, 2C
	• Culture is value influence	4A, 1B, 1C
	• Culture is upbringing influence	3A, 1B, 1C
	• Culture is belief system	1A, 1B, 3C
	• Culture is background	3A, 2C
	• Culture is societal creation	2B, 2C
	• Culture is language-based	1A, 1B, 1C
	• Culture is environmental influence	2B, 1C
	• Culture is learned way	1B, 1C
	• Culture is way of working	1A, 1C
	• Culture is way of life	1A, 1C
• Culture is perception of life	1A, 1B	
• Culture is artefact-laden	2C	
12. What aspects of your culture would you like others to respect?	Category 12-1: Western culture	
	Code	Count
	• German culture (GC) technically intelligent	1B, 1C
	• GC perfectionism a marketing strategy	1B, 1C
	• Afrikaans Culture (AC) demands quality	1A
	• AC has a sense of being proud	1A
	• AC is perfectionist	1A
	• AC: Respect for personal space	1A
	• AC is relentless	1A
	• AC views tardiness is disrespectful	1A
	• GC hardworking	1C
	• GC motivated	1C
	• GC serious	1C
	• GC pedantic	1C
	• GC perfectionist	1B
	• Respect other people	1B
	• White culture (WC) individualistic	1C
	• WC rejects living at home at specific age	1C
	• WC liberal on children	1C
	Category 12-2: African culture	
	Code	Count
• Black Culture (BC) respect morals	1A	
• BC respect in speech acts	1A	
• Ignorance over cultural issues in others noted	1A	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • BC greets people • Venda Culture(VC) teaches voicing opinions • VC teaches avoiding eye contact with elders • Respect my religion • ZC respectful • ZC language should be respected • BC clothes are best • BC food is best • Black cultures are alike with minor differences • BC respect elders • BC shares things 	1A 1A 1A 1C 1B 1B 1A 1A 1A 1A 1A 1C
Category 12-3: Indian culture		
	Code	Count
	<ul style="list-style-type: none"> • Respect vegetarianism • IC extended family-centred • Respect value system • IC cannot institutionalize family • IC family-centred • IC in SA has equal work at home across genders • IC in SA open to women's equality • IC addresses unrelated elders as auntie and uncle • IC respects elders • Respect my religion • IC not punctual • Patriarchy in IC borderline • IC does not enforce boldness in girls • IC teaches girls to be coy • IC teaches girls to be shy • IC patriarchal 	1A, 1B 1B, 1C 1B, 1C 1A 1B 1B 1B 1B 1C 1C 1C 1C 1C 1C 1C 1C 1C 1C
Category 12-4: Coloured culture		
	Code	Count
	<ul style="list-style-type: none"> • Coloured culture (CC) Accept people's viewpoints • CC understand their perspective • Respect my religion • CC accommodates other people • CC listens to other people • CC listens to superiors • CC promotes respects for superiors • CC respects other people • CC teaches obedience to superiors • CC traits individualistic • CC gets up early • CC metaphors misunderstood 	1A, 1C 1A 1C 1C 1C 1C 1C 1C 1C 1C 1C 1C

In some of the questions, some participants will start with a specific answer and then end up with a different answer. The question on frame of reference is a good example of such a question. An excerpt from table D – 1 is a perfect illustration.

Table 5 - 16: An example of participants' answers

Questions	Categories, codes and count	
5. Do you have the same frame of reference as your colleagues – do you understand their example when they explain something?	Category 5-1: Similar frame of reference	
	Code	Count
	• Same frame of reference	4A, 5B, 4C
	• Technical frame of reference	1A, 2B, 1C
	• Same musical frame of reference	1A, 1C
	• No experience in frame of reference misunderstandings	1A, 1B
	• Learns from colleagues	1A
	• Team frame of reference has developed	1A
	• Same sports frame of reference	1C
	• The world is generalized	1C
	Category 5-2: Different frame of reference	
	Code	Count
	• Different frame of reference sometimes	2A, 2B, 2C
	• Understanding frame of reference situational	1C
	• Different frame of reference initially	1B
	• Frames of reference different across cultures	1C
	• Asks questions to counter different frame of reference	1C

This is an example of what the participant had said:

Interviewer: Do you have that same frame of reference when they use examples of everyday life to try to convey a message did you pick up on that?

CD: Yes. We, we're more or less all of us are on the same page when it comes to our preferences that we make ye and we don't understand and then we asked, okay. but then we know like the other person we we know each other very well like what the other person is into and what their preferences are like we know for example when we come in the morning we have coffee so we all make a reference. We will make, we will make a statement to go for coffee but we will say it in a way that no one else would know we say what does it take? What does it do ? What do I have to do here and lets go get coffee we got a good understanding we got a good understanding in the team.

An excerpt from Atlas.ti for CD are

P 1: CD.rtf - 1:12 [I; But what I'm trying to ask ..] (29:30) (Super)

Codes:[Asks questions to counter different frame of reference] [Same frame of reference] [Team frame of reference has developed]

No memos

Questions are grouped in tables according to the objectives of the study. The analysis type (1, 2 or 3 described above) is added to the table to ease understanding of the process followed for each question.

During phase four the data from the all the tables were perused to formulate findings. A finding is stated below the phase 3 table for a group of questions in the main text. The finding is then discussed in terms of the detail codes from phase 2 and the categories from phase 3. Direct quotes are given in some instances to support the main argument in the finding.

For each section or subsection of questions the interpretation is presented below the relevant table. Table 5 - 16 up to table 5 – 23 presents these tables with categories and counts are presented.

Due to interview time constraints towards the end of the interview some questions would be skipped. This explains why fewer participants have responded to some of the latter questions.

5.3.1 What is the intercultural background of participants?

This section investigates personal background of the participants by asking relevant questions. These questions on personal background may be able to help us understand the cultural background, worldview of our participants and their readiness to work in an intercultural environment. Table 5 – 17 represents these questions, question type, categories and count. The detail codes of these answers are given in table D – 1 in Appendix D. The detail codes represent parts of answers and the categories represent broader views. The number of participants supporting a viewpoint is given for each organisation.

Table 5 - 17: Cultural background of participants

Question	Question Type	Category	Count
1. Where did you grow up?	1	Category 1-1: Rural background	1A, 1B, 1C
		Category 1-2: Semi-rural background	1A
		Category 1-3: Urban background	3A, 4B, 4C
2. To what extent do you interact with people from other cultures?	2	Category 2-1: Socializes across cultures	3A, 2B, 3C
		Category 2-2: Limited socialization	1C
2.1. What type of school did you attend?	2	Category 2.1-1: Homogeneous schooling	2A, 2B, 3C
		Category 2.1-2: Intercultural	3A, 2B, 3C

Question	Question Type	Category	Count
		schooling	
2.2. Do you have friends from other cultures?	3	Category 2.2-1: White participants' friends	1A, 2B, 2C
		Code	Count
		<ul style="list-style-type: none"> • Indian friends • Black friends • International friends • Coloured friends 	1A, 1B 1A, 1C 1A, 1B 1C
		Category 2.2-2: Black participants' friends	2A, 1B, 1C
		Code	Count
		<ul style="list-style-type: none"> • White friends • Coloured friends • Indian friends • Other African friends • Intercultural relationship 	2A 1A, 1B 1C 1B 1A
		Category 2.2-3: Coloured participants' friends	1A, 1C
		Code	Count
		Intercultural friends	1A, 1C
		Category 2.2-4: Indian participants' friends	1A, 2B, 1C
		Code	Count
		<ul style="list-style-type: none"> • Black friends • African foreigners friends • Asian friends • Intercultural friends • Intercultural relationship 	1C 1B 1B 1A 1C
3. Where did you study for tertiary education?	1	Category 3-1: Multicultural education	5A, 2B, 2C
		Category 3-2: Homogeneous education	3B, 1C
		Category 3-3: Correspondence education	2C
4. Does your cultural background influence the way you do your job?	1	Category 4-1: Cultural influence on work	4A, 4B, 1C
		Category 4-2: Culture does not influence work	1A, 1B, 4C
5. Do you have the same frame of reference as your colleagues – do you understand their example when they explain something?	2	Category 5-1: Similar frame of reference	4A, 5B, 4C
		Category 5-2: Different frame of reference	2A, 2B, 2C
6. Have you been exposed to other people's culture prior to joining the organization? If yes, how?	3	Category 6: Exposure to other cultures	5A, 5B, 5C
		Code	Count
		<ul style="list-style-type: none"> • Multicultural school • Multicultural education • Intercultural work • Intercultural friends 	3A, 2B, 3C 5A, 2B, 1C 2B, 3C 3A, 2B, 3C

Question	Question Type	Category	Count
		<ul style="list-style-type: none"> • Interracial relationships • Intercultural environment 	1A, 1C 1B, 1C
7. What are their experiences in terms of cultural differences when you joined the organization?	1	Category 7-1: Culture shock not experienced	3A, 2B, 2C
		Category 7-2: Cultures not evident	1A, 1B, 1C
		Category 7-3: Culture shock experienced	1A, 2B, 2C
8. Did you undergo any intercultural training in this organization?	1	Category 8-1: No intercultural training	5A, 5B, 4C
		Category 8-2: Intercultural training	1C
9. What are your experiences on different cultures after being in the organization for a while?	3	Category 9-1: Adjusted to intercultural minor differences	4A, 3B, 3C
		Code	Count
		<ul style="list-style-type: none"> • Adjusted to intercultural minor differences • Multiculturalism is interesting • Cultural differences difficult to pinpoint afterwards • Various individual answers 	4A, 3B, 3C 2A, 1B 1A, 1C See table D – 1
		Category 9-2: Accepted cultures readily	1B, 1C
		Code	Count
		<ul style="list-style-type: none"> • Accepted different cultures readily • Various individual answers 	1B, 1C See table D – 1
		Category 9-3: Cultural differences not obvious	1A, 1B, 1C
		Code	Count
		<ul style="list-style-type: none"> • All team members treated equally • All cultures work the same • Various individual answers 	1A, 1C 1B, 1C See table D – 1

Finding 1:

Even though most participants are from different cultural environments in terms of background, schooling, tertiary education and socialization and did not have intercultural training, two thirds of the participants did not experience culture shock and have similar frame of references and this leads to the conclusion that often people from different cultural background find the means of navigating their way into successful intercultural interaction.

Discussion on finding 1: Intercultural background of participants

The discussion of the findings starts with question 4 because question 1 up to 3 are purely statistics and self-explanatory.

The perception that culture influences the way of working was held by 9 participants and 6 did not believe that culture has any influence in the way they do their job. Four participants from organization A, 4 participants from organization B and 1 participant from organization C had the perception that culture influences way of working, 1 participant from organization A, 1 participant from organization B and 4 participants from organization C had the perception that culture did not influence way of working.

Four participants from organization A, 5 participants from organization B and 4 participants from organization C said they had the same frame of reference with their fellow team members. Two participants from organization A, 2 participants from organization B and 2 participants from organization C had different frame of reference sometimes and one said initially their frame of reference was different from that of their colleagues.

Frames of reference are differ across cultures but people can apply different frames of reference that are relevant for different cultural contexts. Some participants (4), 1 from organization A, 2 from organization B and 1 from organization C, maintain that their technical background gives them the same frame of reference. A technical frame of reference or team frame of reference develops in the workplace that is not necessarily the same as home culture. This is a participant had to say on frame of reference:

CRU (code from table 5 – 7): “it [referring to: frame of reference] is different because the terms that you use, maybe we can relate with certain things in our communities, can I, I don’t know if you quite understand. It’s easier with Indian people instead of having to explain something to someone else, but of cause generally that if you are not talking to Indian people you wouldn’t be using those terms, so it’s fine.”

All 5 participants from organization A, 5 participants from organization B and 5 participants from organization C had some exposure to other people’s cultures. Cultural diversity is encountered through interaction in a multicultural school or tertiary institution, work, intercultural friends, interracial relationships and intercultural background. Three participants from organization A, 2 participants from organization B and 3 participants from organization C were exposed to other people’s culture through interaction in a multicultural school. Five participants from organization A, 2 participants from organization B and 1 participant from organization C were exposed to other people’s cultures through interaction in a multicultural tertiary institution. Two participants from organization B and 3 participants from organization C were exposed to other people’s cultures through interaction in a intercultural work. Three participants from organization A, 2 participants from organization B and 3 participants from organization C were exposed to other people’s cultures through interaction with intercultural friends. One participant from organization

A and 1 participant from organization C were exposed to other people's cultures through interaction in intercultural relationships. One participant from organization B and 1 participant from organization C were exposed to other people's cultures through growing up in an intercultural environment.

One participant from organization A had experienced culture shock at a tertiary institution, 1 participant from organization A, 2 participants from organization B and 2 participants from organization C had culture shock initially and 3 participants from organization A, 2 participants from organization B, 2 participants from organization C had no culture shock, 1 participant from organization A and 1 participant from organization C were oblivious to cultural differences.

Only 1 participant from organization C had intercultural training and from previous employment. Five participants from organization A, 5 participants from organization B and 4 participants from organization C had no intercultural training. Intercultural learning from previous experiences assisted participants cope with intercultural environment. Intercultural learning had resulted from multicultural schooling and education, multicultural upbringing, previous intercultural work and interracial relationships. Intercultural interactions are difficult initially until intercultural learning takes place.

CD, a participant who had been through diversity training previously, said:

CD: "Not really all of like the soft skills that I've acquired is, was at my previous workplace and we went on diversity training and all those things at the current organization it's just essentially too busy to be able to get to go on."

Interviewer: "What did they teach you on the diversity training?"

CD: "Well it's all just about accommodating and accepting people for the way they are and how they are and uhm we went in a group of about twenty to thirty people and each person had to explain what they, where they come from, and what they generally do after hours and on weekends and on special occasions and essentially that was what they did."

Interviewer: "Was it a good idea?"

CD: "Well, ja I suppose it is a good idea then you can understand how that other person thinks as well and get a better understanding of your team mates."

Interviewer: "Did it changes the way you were?"

CD: "Not necessarily. Look the way I were has always been has always been same it's because I find myself like very, I know it's, I am open to change and new ideas and all those things so I really I don't judge people on the way they do things and they way they are like I just do my work."

Ten participants, 4 from organization A, 3 from organization B and 3 from organization C, maintain that they have adjusted to minor cultural differences in their organizations. Three participants, 1 from each organization A, maintain that cultural differences are not obvious in their organizations. Two participants, 1 from organization B and 1 from organization C maintain that they readily accepted cultures readily. Participating in intercultural teams has given the participants a chance to learn about traditions, religion, rituals and opinions. In intercultural interaction finding commonalities among team members leads to acceptance of other cultures. A participant points out to the importance of finding commonality amongst cultures when he says:

AMO: "I believe that all cultures have its own richness to me there is no such thing as this culture is better or this culture we can sometimes align more easier because there is more commonality with this culture."

Another participant said the following regarding commonalities in cultures:

BJ: "I think expectations is more what is going to, you have to adapt to people of different cultures, but I think the commonality, what is common between people are actually more than what their differences is. It seems to me that it is a lot easier than it would be expected."

Cultural differences affect initial interactions among team members. Even though some participants had previously said they had no cultural shock, they admit that they had to make adjustments to intercultural differences.

5.3.2 What is culture?

This section is subdivided into 3 subsections, the views on culture, cultural context and team performance and religious culture.

5.3.2.1 Views on culture

These questions address the different views on culture by participants and their views on their own as well as others' culture. It starts by discovering the understanding of participants on culture and ethnocentrism. The next step is to discover their views on their own culture as well as that of others. These questions, question types, categories, codes and count are presented

in table 5 – 18. The result of the detail coding for these answers is given in table D – 3 in appendix D.

Table 5 - 18: Views on culture

Question	Question Type	Category	Count
10. What do you understand by the concept of culture?	3	Category 10: Defines culture	5A, 5B, 5C
		Codes	Count
		• Culture is traditions	3A, 2B, 2C
		• Culture is value influence	4A, 1B, 1C
		• Culture is upbringing influence	3A, 1B, 1C
		• Culture is belief system	1A, 1B, 3C
		• Culture is background	3A, 2C
		• Culture is societal creation	2B, 2C
		• Culture is language-based	1A, 1B, 1C
		• Culture is environmental influence	2B, 1C
		• Culture is learned way	1B, 1C
		• Culture is way of working	1A, 1C
• Culture is way of life	1A, 1C		
• Culture is perception of life	1A, 1B		
• Culture is artefact-laden	2C		
11. What does it mean to be ethnocentric to others? How do you experience this?	1	Category 11-1: Define Ethnocentric	1B
		Category 11-2: Ethnocentric unknown	4A, 4B, 1C
		Category 11-3: Question not asked	1A, 4C
		Category 11-4: Ethnocentric experience	1A, 2B, 1C
		Category 11-5: Never experienced ethnocentrism	1A, 1B, 1C
12. What aspects of your culture would you like others to respect?	3	Category 12-1: Western culture	1A, 2B, 2C
		Codes	Count
		• German Culture (GC) technically intelligent	1B,1C
		• GC perfectionist	1B,1C
		• Various individual answers	See table D - 2
		Category 12-2: African culture	2A, 1B, 1C
		Codes	Count
		• Various individual answers	See table D - 2
		Category 12-3: Indian culture	1A, 2B, 1C
		Codes	Count
		• Respect vegetarianism	1A, 1B
		• IC extended family-centred	1B, 1C
• IC family-centred	1B, 1C		
• Various individual answers	See table D - 2		
Category 12-4: Coloured culture	1A, 1C		
Codes	Count		
• CC Accept people's viewpoints	1A, 1C		
• Various individual answers	See table D - 2		
13. Which aspects of other cultures do you find irritating?	3	Category 13-1: White participants' views	1A, 2B, 2C
		Codes	Count
		• Other cultures disrespects punctuality	1A, 1C See table D - 2

Question	Question Type	Category	Count
		• Various individual answers	
		Category 13-2: Black participants' views	2A, 1B, 1C
		Codes	Count
		• Various individual answers	See table D - 2
		Category 13-3: Indian participants' views	1A, 2B, 1C
		Codes	Count
		• Afrikaners prefer to speak Afrikaans even in meetings	1A, 1C
		• Various individual answers	See table D - 2
		Category 13-4: Coloured participants' views	1A, 1C
		Codes	Count
14. Which aspects of other cultures do you find impressive?	3	• Various individual answers	See table D - 2
		Category 14-1: White participants' views	1A, 1B, 2C
		Codes	Count
		• Various individual answers	See table D - 2
		Category 14-2: Black participants' views	2A, 1B, 1C
		Codes	Count
		• Various individual answers	See table D - 2
		Category 14-3: Indian participants' views	1A, 2B, 1C
		Codes	Count
		• Various individual answers	See table D - 2
		Category 14-4: Coloured participants' views	1A, 1C
		Codes	Count
		• Various individual answers	See table D - 2

Finding 2:

Culture is tacit in nature therefore participants have differing views on what their culture is and what the culture of others is. Burnham and Harris (2002:192) expressed this view when they maintained that culture and ethnicity are significant at all times but not essentially obvious.

Discussion on finding 2: views on culture

The participants' expressed their views on what culture is. Across all three organizations the participants seemed to have the same understanding on what culture is. Culture is traditions, values and upbringing influence, belief system, background, societal creation, language-based, environmental influence, a learned way of working and life, perception of life and it is artefact-laden.

Three participants from organization A, 2 participants from organization B and 2 participants from organization C view culture as traditions. Four participants from organization A, 1 participant from organization B and 1 participant from organization C has a view that culture is value influence. Three participants from organization A, 1 participant from organization B and a participant from organization C maintain that culture is upbringing influence. A participant from organization A, 1 participant from organization B and 3 participants from organization C maintain that culture is belief system. Two participants from organization B and 2 participants from organization C express that culture is societal creation.

Three participants from organization A and 2 participants from organization C maintain that culture is background. A participant from organization A, 1 participant from organization B and 1 participant from organization C maintain that culture is language-based. Two participants from organization B and 1 participant from organization C have the view that culture is environmental influence. A participant from organization B and 1 participant from organization C maintain that culture is learned way. A participant from organization A and a participant from organization C express that culture is way of working. A participant from organization A and 1 participant from organization C have the view that culture is way of life. A participant from organization A and 1 participant from organization B maintain that culture is a perception of life. Two participants from organization C maintain that culture is artefact-laden.

Nine participants, four from organization A, four from organization B and one from organization C, had no idea what ethnocentrism meant, thereby leading to the question being asked to only the first participant during the last interview at organization C. Only 1 participant from organization B had an inkling of what is ethnocentrism. A participant from organization A, 2 participants from organization B and a participant from organization C had experienced ethnocentrism in responding to a follow-up question after the term was explained by the interviewer. Two participants had experienced ethnocentrism in the form of gender discrimination and 2 participants had experienced it in the form of skin tone discrimination. Two participants expressed ethnocentrism in the form of tribalism.

When asked how they had experienced ethnocentrism this is what one participant said

BE: "Of Course that is very different. Strictly in Africa for example Tanzania I found that as a woman that I'm worth much less that's a big difference, of course there is a discrimination of because of sex also in [inaudible] But it's more it's not such big difference, in Africa I found it there is a difference. In Bangladesh being a member of the white ethnic group would get you preferred and you have a higher value in society compared to the people living there, I also experience it in India for example if you would like to watch television in India you will see

the selecting of people with bright skin even if you are Indian they preferring people with a white skin on television so for soap operas for television shows they actually selecting people with a bright skin. And people with a darker skin are valued much less and it is terrible to see that. I don't know if this effect affects in South Africa as well?"

All cultures emphasize respect but they emphasize respect for different things. They emphasize respect for punctuality, religion, language, opinions, people, value system, gender equality and cultural artefacts. Participants from homogeneous cultures had different experiences on their own cultures. This supports viewpoints expressed in literature. Cultures are hardly ever homogeneous creations as subcultures subsist based on region, religious beliefs, and language (Limon & La France, 2005:126). People have different interpretations of culture including their own culture. There exists diversity within the homogeneous cultures. The mental programs from diverse cultural contexts may be conflicting and this makes it difficult to anticipate in an individual's conduct within a new scenario (Hofstede & Hofstede, 2005:11).

Participants find aspects of other cultures irritating and these can be a barrier to interaction. The aspects that other participants find irritating include religion, non-punctuality in team activities, speech acts e.g. loudness and smirk smiling, insisting on speaking a different language, patriarchy and body language. Some participants sought to be politically correct by not being specific. They would use the words "some cultures" or "other cultures" rather than be specific. This is an example of what one participant said:

AF: "Ummm. I can't say that there is something standing out except that some cultures are a bit louder, but I think that is more personality thing maybe, I am not too sure, so I can't point it out and say precisely what I hate, because that what makes people interesting and you just have to learn to work around it."

It was easier for participants to criticize the same ethnicity culture. When asked what they found irritating about other cultures some participants said:

AF (white): "The only thing, from personal experience is more on the English side is that they do not respect your religion or something like that whereas other cultures would respect it and I think if we go there that is a different culture again."

AMA (black): "There's one Zulu guy and the rest is fine, your Pedi's and Tswana and Coloureds but with him everybody tries to accommodate him. I've picked it up recently he's speaking Zulu and everybody will answer him back in Zulu but when they speaking their language he answer back in Zulu so the Zulu is always so for me its Zulu and that's it so you can get up and you go with the flow I don't know I don't think they pick it up as an issue but I've noticed it."

Participants expressed different views on other cultures. This is in line with Hybels and Weaver (2004:65), when they maintain that cultural identities of individuals differ in strength and content. Cultural identity is complicated by personality. When someone behaves in a specific way it is difficult to gauge whether the behaviour is rooted in culture or personality.

Rituals and cultural artefacts are the visible parts of culture. Lustig and Koester (2010:85) explains this finding when they maintain that cultural patterns cannot be directly seen, heard or experienced but the shared interpretations evident in people’s speech and actions can be easily observed. Cultural artefacts and rituals are ultimately observed or interpreted as culture.

Some impressive aspects of other cultures include family values, respect for the elderly, respect for women, humility, community values and respect of people's opinions.

5.3.2.2 Cultural context and team performance

This section attempts to discover how cultural contexts, such as professional, gender, organizational and ethnic culture, affect intercultural team members’ interactions with one another, thereby intercultural communication. Table 5 – 19 presents the responses to these questions. The detailed codes of these answers are given in table D – 3 in Appendix D. Once again the detailed codes represent parts of answers and the categories represent broader views. The number of participants supporting a certain viewpoint is provided for each organisation.

Table 5 - 19: Cultural context and team performance

Question	Question Type	Category	Count
15. How often have you been in multicultural teams?	1	Category 15-1: Previous homogeneous work experience	1A, 2B, 2C
		Category 15-2: Intercultural work experience only	4A, 3B, 3C
15.1. How were your experiences in both homogeneous and heterogeneous teams?	3	Category 15.1-1: Homogeneous team experience	1A, 2B, 2C
		Code	Count
		<ul style="list-style-type: none"> • Homogeneous culture makes things easier • Homogeneity facilitates understanding • Various individual answers 	4A, 1B 1A, 1C See table D - 3
		Category 15.1-2: Heterogeneous team experience	5A, 5B, 5C
		Code	Count

Question	Question Type	Category	Count
		<ul style="list-style-type: none"> Multiculturalism a chance of learning Multiculturalism promotes problem solution Multiculturalism is interesting Multicultural team promotes different viewpoints Multicultural and homogeneous teams perform the same Various individual answers 	1A, 2B, 3C 1B, 3C 2A, 1B 1B, 2C 1A, 1C See table D - 3
16. Do you think men and women can contribute equally to team?	2	Category 16-1: Equal gender contribution	4A, 5B, 5C
		Category 16-2: Women contributes more	1A, 2B, 1C
		Category 16-3: Men contributes more	1A, 1C
17. Is there a specific organizational culture that counters all other cultures?	1	Category 17-1: Organizational culture counters personal culture	2A, 1B, 1C
		Category 17-2: Organizational culture compliments personal culture	3A, 3C
		Category 17-3: Organizational culture has no influence on personal culture	1B
		Category 17-4: Question not asked or answered	3B
18. When you found yourself in disagreements arising from cultural differences, how did you deal with the situation?	1	Category 18-1: Cultural conflicts occur	3A, 3B, 2C
		Category 18-2: Conflicts not cultural	2A, 2B, 3C
		Category 18-3: Conflict resolution mechanisms	2A, 2B, 2C
19. What aspects of your culture have surfaced in the workplace?	3	Category 19-1: White culture	1A, 2B
		Code	Count
		• Various individual answers	See table D - 3
		Category 19-2: Black culture	1A,1C
		Code	Count
		• Various individual answers	See table D - 3
		Category 19-3: Indian culture	1A, 2B, 1C
		Code	Count
		• Various individual answers	See table D - 3
		Category 19-4: Coloured culture	1A, 1C
Code	Count		
• Various individual answers	See table D - 3		
20. What aspects of your culture did you find useful in team performance?	3	Category 20-1: Performance-oriented aspects of white culture	1A, 2B
		Code	Count
		• Cultural perfectionism aids team performance	1A, 2B
		Category 20-2: Performance-oriented aspects of Black culture	2A
		Code	Count
		• Various individual answers	See table D - 3
Category 20-3: Performance-oriented aspects of Indian culture	1A, 2B, 1C		

Question	Question Type	Category	Count
		Code	Count
		<ul style="list-style-type: none"> • Good working relationships • Various individual answers 	1A,1B See table D - 3
		Category 20-4: Performance-oriented aspects of Coloured culture	1A, 1C
		Code	Count
		<ul style="list-style-type: none"> • Various individual answers 	See table D - 3

Finding 3:

There are advantages of heterogeneous and homogeneous teams, while role of importance of gender is balanced; conflicts are sometimes attributed to cultural differences.

Discussion on finding

Five participants, 1 from organization A, 2 from organization B and 2 from organization C had experience in both multicultural and monocultural work environment. Ten participants had always worked in a multicultural environment, four from organization A, 3 from organization B and 3 from organization C, had always worked in a multicultural environment.

Five participants, 4 from organization A and 1 from organization B, had the view that homogeneous team facilitates faster problem solution and two participants, 1 from organization A and 1 from organization C has the view that homogeneity promotes more understanding among team members.

A multicultural team is a chance for learning, promotes problem solution and different viewpoints, and is interesting. Five participants, 1 from organization A, 2 from organization B and 3 from organization C, maintain that a multicultural team is a chance for learning. Four participants, 1 from organization A and 3 from organization C maintain that a multicultural team promotes problem solution. Three participants, 2 from organization A and 1 from organization B maintain that multiculturalism is interesting. Three participants, 1 from organization B and 2 from organization C maintain that a multicultural team promotes different viewpoints. Two participants, 1 from organization A and another from organization C said both multicultural and homogeneous teams perform the same.

The view by some participants that multiculturalism promotes different viewpoints and problem solution whereas homogeneity harnesses the quicker problem solution due to same viewpoints, are the same as the research by Watson, Kumar and Michaelson (1993) and Cox, Lobel and McLeod (1991).

It is interesting to note that three participants of Organisation A was able to discuss advantages of homogeneous teams although they have never worked in such teams.

Four participants from organization A, 5 participants from organization B and 5 participants from organization C maintain that contribution across genders is the same. The view of all these 14 participants, who were asked whether they think men and women can contribute equally to team, is that contribution across genders is the same. Four participants also have a view that women do more since they balance home and work. Two participants also have a view that men do more since they can work longer hours. Patriarchy influences equal contribution across gender lines. A participant maintains that women in a patriarchal society may not be as assertive as men.

BE: "Of course. The problem is that men are more dominant, so ultimately, it's a cultural issue. If a woman are used to let a man speak and let the men dominate their contributions may not be similar. But that's not a matter of your sex, it's more a matter of culture so there are culture issues. There are projects where women per se are absent just because it's a cultural thing."

Two participants from organization A, 1 participant from organization B and 1 participant from organization C maintained that organizational culture counters personal culture. Three participants from organization A and 3 participants from organization C maintain that organizational culture compliments personal culture. One participant from organization B maintains that organizational culture has no influence on personal culture. The question was not asked to three participants from organization B. Current organizational culture fosters equal treatment of all employees. It is dynamic and task-driven. Organizational culture observed punctuality to meetings, commitment, transparency, informal work environment and respect for seniority or experience.

Three participants from organization A, 3 participants from organization B and 2 participants from organization C had experienced cultural conflict. In total cultural conflict is experienced by 8 participants. Cultural disagreements that were experienced include argumentativeness, language and cultural artefacts. Two participants from organization A, 2 participants from organization B and 3 participants from organization C could not relate conflicts to culture. A total of 7 participants could not relate conflicts to culture but rather said conflicts were work-based, stress-related or personality-based. These conflicts may occur between multicultural team members. Two participants from organization A, 2 participants from organization B and 2 participants from organization C explained how teams resolved cultural conflict. Teams resolve

cultural disagreements by being level-headed in conflict, listening, smoothing, intervention, understanding, or expression of opinion.

In total 11 participants, four from organization A, 4 from organization B and 3 from organization C, expressed values that surface in the workplace. This presentation of the results is from counting individuals per organization in spite of cultural affiliation. Cultural aspects that have surfaced in the workplace include values such as perfectionism, persistence, integrity, respect for others, respect for others' opinion, respect for elders and superiors and cultural artefacts such as food and clothing.

In total 11 participants, five from organization A, 4 from organization B and 2 from organization C expressed values that influence performance. Cultural aspects that influence performance positively are perfectionism, work approach, respect for others' opinions, respect for superiors, work approach, respect for value and belief systems.

5.3.2.3 What is religious culture?

This section attempts to discover how the religious cultural context affects team members' interactions with one another, thereby intercultural communication. Some participants do not view themselves as cultural yet subscribes to a religious culture. The result of the detail coding for these answers is given in table D – 4 in appendix D. Table 5 – 20 provided here represents the main argument of specific participants.

Table 5 - 20: Religious culture

Question	Question Type	Category	Count
21. Do you know religious orientation of team members?	1	Category 21-1: Some team members' religious orientation known	3A, 5B, 5C
		Category 21-2: Question not asked	2A
21.1 Do you react to it?	1	Category 21.1-1: Reaction to religious orientation	3A, 1B
		Category 21.1-2: No reaction to religious orientation	1A, 4B, 2C
		Category 21.1-3: Question not asked	1A, 3C
22. Do your religious beliefs affect the way you do your job?	1	Category 22-1: Influence of religion on work	3A, 2B, 4C
		Category 22-2: No influence of religion on work	2A, 3B, 1C
23. Do your religious beliefs affect the way relate to your teammates?	1	Category 23-1: Influence of religion on relationships	4A, 1B, 3C
		Category 23-1: No influence of religion on relationships	1A, 4B, 2C

Finding 4:

Most participants (12) are religious but discussion of religion is not common in the workplace leading to the conclusion that religion is important to individuals but it is an intimate issue and therefore discussed only with some colleagues.

Discussion on finding 4: religious culture

All the 13 participants who were asked whether they know the religious orientation of their team members said they knew the religious orientation of some or all their team members, and only 2 participants from organization A were not asked the question. A participant believes that in his organization religious differences are clearly visible. This is what he had to say:

BJ: "I still think the main difference between people who we are probably religious views. And I still think that it is a biggest barrier."

Discussion of religion seems unimportant among team members. This is what s participant had to say on this:

BE: "Nobody has tried to share their religion beliefs, maybe, I don't mind. But that's a very personal thing and people are really picky about their religious feelings. Many people feel that it was, they wouldn't really like it if you start criticizing."

Seven participants, 1 from organization A, 4 from organization B and 2 from organization C, do not react to religious orientation. Four participants, 3 from organization A and 1 from organization B react to religious orientation. Four participants, 1 from organization A and 3 from organization C were not asked this question.

Nine participants maintain that religion affects the way they do their job of which 3 are from organization A, 2 from organization B and 4 from organization C. Religion teaches values such as honesty, rationality, and respect for elders and behaviour. Six participants maintain that religion does not influence their work.

Eight participants maintain that religion affects how team members relate to one another of which 4 are from organization A, 1 from organization B and 3 from organization C. Six participants, 1 from organization A, 4 from organization B and 2 from organization C, maintain that religion does not affect relationships with colleagues.

5.3.3 How is communication in different cultural contexts?

These questions investigate the level of difficulty of communication with participants from different cultural context such as cultural affiliation, class distinction, language, non-verbal communication, gender, age, profession and group contexts. Once again the detail codes for this table can be found in Appendix D. Table D – 5 contain the detail codes for these questions in accordance to portions of answers rather than total views of participants. Table 5 – 21 provides the categorisation of codes.

Table 5 - 21: Communication and culture

Question	Question Type	Category	Count
24. Do you find it difficult to communicate with colleagues?	1	Category 24-1: Communication easy	3A, 4B, 4C
		Category 24-2: Communication difficulty sometimes	2A, 1B, 1C
24.1. Does their culture influence this?	1	Category 24.1-1: Culture influences communication	3A, 3B, 3C
		Category 24.1-2: Culture has no influence on communication	1A, 1B, 2C
		Category 24.1-3: Question not asked	1A, 1B
25. What makes it easier or more difficult to talk to colleagues?	2	Category 25-1: Easy to communicate with friendly individuals that displays openness	1A, 1B, 2C
		Category 25-2: Difficulty linked to individual's resistance to critique	1A
		Category 25-3: Difficulty linked to different opinions on everyday non work issues	1A
		Category 25-4: Difficult communication linked to individual personalities	1A, 1B, 1C
		Category 25-5: Other reasons for communication difficulty	1A, 2B, 1C
		Category 25-6: Question not asked or answered	1A, 1B, 1C
26. Do you find it difficult to communicate with your superiors?	1	Category 26-1: Communication easy with superiors	1A, 4B, 2C
		Category 26-2: Communication difficulty with superiors	3A, 2C
		Category 26-3: Communication difficulty with superiors initially	1C
		Category 26-4: Question not asked	1A, 1B
27. Do you use the same language when communicating to your colleagues?	2	Category 27-1: Same language in communication	4A, 5B, 3C
		Category 27-2: Different language with some colleagues	3A, 2B, 2C
28. How do you feel when others use a different language in your presence?	1	Category 28-1: Different language speaking acceptable	4A, 2B, 2C
		Category 28-2: Different languages in meeting unacceptable	1A, 3B, 2C

Question	Question Type	Category	Count
		Category 28-3: Answer cannot be categorised	1C
29. Do you use non-verbal communication?	1	Category 29-1: Non-verbal communication used	2A, 4B, 3C
		Category 29-2: Non-verbal communication not observed	1B, 2C
		Category 29-3: Question not asked	3A
30. Do you experience colleagues using non-verbal communication?	1	Category 30-1: Non-verbal communication observed	5A, 4B, 2C
		Category 30-2: Non-verbal communication not observed	1B, 3C
31. Do you prefer e-mail or direct communication?	1	Category 31-1: Both email and direct communication	2A, 1B, 3C
		Category 31-2: Email Communication preferred	1B
		Category 31-3: Direct communication preferred	2A, 3B, 2C
		Category 31- 4: Question not asked	1A
32. How easy is it for you to communicate with individuals?	1	Category 32-1: Communication easier with individuals	4A, 4B, 3C
		Category 32-2: Communication difficult with individuals	1B, 2C
		Category 32-3: Question not asked	1A
33. How easy is it for you to communicate with individuals from the same culture?	1	Category 33-1: Communication easier with individuals from the same culture	3A, 3B, 3C
		Category 33-2: Level of communication difficulty not culture dependent	1A, 2B, 2C
		Category 33-3: Question not asked	1A
34. Is it easier to communicate with men or women?	1	Category 34-1: Communication easy with all genders	2A, 3B, 4C
		Category 34-2: Communicate easier with same gender	1A
		Category 34-3: Communicate easier with opposite gender	1A, 2B, 1C
		Category 34-4: Question not asked	1A
35. How easy is it for you to communicate with groups?	1	Category 35-1: Communication easy with groups	3A, 1B, 2C
		Category 35-2: Communicate difficult with groups	1A, 3B, 2C
		Category 35-3: Question not asked	1A, 1B, 1C
36. Do you think/ experience that body language is connected to culture?	1	Category 36-1: Body language is cultural	5A, 5B, 3C
		Category 36-2: Body language is not cultural	1C
		Category 36-3: Body language not observed	1C
37. How do you experience communication with team members who have different skill-sets?	1	Category 37-1: Communication easy with differently skilled colleagues	4A, 1B, 1C
		Category 37-2: Communicate difficult with differently skilled colleagues	1A, 4B, 2C
		Category 37-3: Question not asked	2C
38. How do you	1	Category 38-1: Communication easy with	1A, 1B, 2C

Question	Question Type	Category	Count
experience communication with team members who have different technological experiences?		colleagues with different technological experience	
		Category 38-2: Communicate difficult with colleagues with different technological experience	1A, 2B
		Category 38-3: Question not asked	3A, 2B, 3C
39. Does your age influence the way you communicate with team members?	1	Category 39-1: Age influences communication behaviour	3A, 1B, 3C
		Category 39-2: Age does not influence communication behaviour	2A, 3B, 2C
		Category 39-3: Question not asked	1B

Finding 5:

Communication in general is open, but culture, personality and age may affect the level of communication difficulty.

Discussion on finding: communication openness

Most participants (11), 3 from organization A, 4 from organization B and 4 from organization C, said they communicate easily with colleagues and only 4 participants had difficulty communicating with colleagues sometimes.

Three participants from organization A, 3 participant from organization B and 3 participants from organization C maintain that culture influences communication with colleagues. Four participants, 1 from organization A, 1 from organization B and 2 from organization C, have the view that culture does not influence communication. Two participants were not asked this question. This is what a participant had to say:

CM: “uhm. I probably would seek out a certain cultures. I probably seek out what’s closest to what I know uhm from a language point of view I would guess. I would most likely seek out a woman I think. Uhm and I think, I, thinking about, but now I think it would be done subconscious. You I would think about it in fact no, I would choose what’s the closest I do know.”

Four participants, 1 from organization A, 1 from organization B and 2 from organization C, said communication is easy across cultures. Individual participants maintain that communication is made easy by open people, jokes, asking questions, friendly cues and openness to others’ viewpoints and ideas. A participant from organization A linked communication difficulty to individual resistance to critique. A participant from organization A linked communication difficulty to differing opinions on everyday non-work issues. Three participants, one from each organization, linked communication difficulty to personalities. Individual participants attribute

communication difficulty to individual resistance to critique; differing opinions on everyday non-work issues; individual personalities and other reasons include inexperience, negative setting, unfriendly cues and language. One participant from each organization was not asked this question.

Seven participants, one participant from organization A, 2 participants from organization C, 4 participants from organization B said communication with their superiors was easy. Three participants from organization A and 2 participants from organization C said communication with superiors was difficult. A participant from organization C said communication with superiors was difficult initially. A participant from organization A and a participant from organization B were not asked this question. A participant said communication with superiors can be complicated by culture. Communication difficulty can be complicated by culture as one participant says:

AP: “uhm. My line manager, no, but with Elsa*, it’s a difference in culture now, cause with my line manager I can be as open as I can be but with Elsa. I do start something to say but then I’m thinking I’ll probably be disrespecting her in a way or two so I won’t say those things sometimes.”

* names have been changed

Four participants from organization A, 5 participants from organization B and 3 participants from organization C, in total 12 participants, use English as a communication language with their colleagues as they referred to English as the business language. Three participants from organization A, 2 participants from organization B and 2 participants from organization C maintain that other languages are used in individual communications and occasionally in meetings as well.

A participant from organization A, 3 participants from organization B and 2 participants from organization C, a total of 6 participants, felt that the use of a different language in their presence was not acceptable. Four participants from organization A, 2 participants from organization B and 2 participants from organization C maintained that they are not bothered when others use a different language in their presence. An answer by a participant from organization C was unclear. Most participants had no problem with speaking different languages, other than English, in private chats but some participants would be offended by speaking of different language in a meeting. Language of communication has an impact on the communication process.

Some participants feel that it is important in a meeting that all participants understand the language of participation and not be excluded. BGU explains this when she answers this question.

BGU: “Uhm. It’s not okay. To make an example, you find that I’m, I am only a Zulu amongst Afrikaners, so sometimes they, you know, sometimes you feel that they have just forgotten about you or they are ignoring you. They spoke their language, so you can’t really understand what they are saying. Although it won’t be you, maybe somebody asks a question and the other one will try and explain in Afrikaans that doesn’t feel good, cause you also want to know what they are talking about. It might not be that they are talking about you, but you just want to know, you don’t want to feel that you are, you know. And it happens here.”

Most participants (9), 2 participants from organization A, 4 participants from organization B and 3 participants from organization C use non-verbal communication. Three participants, 1 from organization B and 2 from organization C, said they were oblivious to non-verbal communication and the other 3 from organization A were not asked this question. Non-verbal communication is a great way of expressing oneself. A participant gave this definition of non-verbal communication:

BE: “according to my definition non-verbal communication is everything that we do. Smile or laugh, where we look, the way we act, the way we move. It does show about our emotions, uh, on those rare occasions you will use non-verbal communication to communicate sexual things.”

Most of the participants (11), 5 from organization A, 4 from organization B and 2 from organization C experienced non-verbal communication, whereas a few participants, 1 from organization B and 3 from organization C did not observe non-verbal communication. Sensitivity to non-verbal communication is dependent on the situation. According to a participant time makes non-verbal communication acceptable. This is what AMO had to say:

AMO: “I think I do, but it’s only after you, because I work long enough with people so that you build up and understanding you work long enough with a person then obviously certain facial expression body shrugs or whatever you understand this person is upset today or showing disgust or whatever.”

In terms of mode of communication, six participants, 2 from organization A, 1 from organization B and 3 from organization C, prefers both email and direct communication. Seven participants, 2 from organization A, 3 from organization B and 2 from organization C, prefer direct communication. One participant from organization B prefers email. One participant from organization B was not asked the question. Reasons given by participants why they prefer direct communication is that it provides instant message delivery and feedback. Email is preferred because it delivers the message, and it facilitates record-keeping. Some participants who do not prefer Email gave several reasons. These are that it is impersonal, it is open to

misinterpretation and typing and message delivery takes longer. According to participants direct communication is disadvantageous in that it does not provide proof of communication.

Eleven participants, 4 from organization A, 4 from organization B and 3 from organization C maintains that communication with individuals is easy. Three participants, 1 from organization B and 2 from organization C find communication with individuals difficult and one participant from organization A was not asked the question. Communication difficulty can be as a result of culture, language, personality and strangers. This is what a reserved participant had to say when asked about communication with individuals:

CRA: "I if I walk bold into a room of strange people well I would kind of stand around for a bit because it takes me a while to. What would happen in that case is I probably would relate with probably would relate more to somebody initially from my own culture but because I'm standing around it take I guess somebody to get the communication going. Okay ja."

Nine participants, 3 from organization A, 3 from organization B and 3 from organization C, maintain that communication with homogeneous culture is easier. Five participants, 1 from organization A, 2 from organization B and 2 from organization C, said culture makes no difference to communication easiness or difficulty. A participant from organization A was not asked this question. This is also addressed in section 5.3.6 Communication is made difficult by heterogeneity and language. Homogeneous culture makes interaction easier (5). Homogeneous language makes communication easier (6). A participant had this to say:

BE: "you mean of my own culture. Given that we speak the same language, oh that makes such a big, big difference and of course it's just myself with much more detail and with much more finesse if I speak in my mother language. Is it the same for every individual, is it?"

Nine participants, 2 from organization A, 3 from organization B and 4 from organization C, maintain that communication is easy with all genders. A participant from organization A prefers communication with same gender colleagues. Four participants prefer communication with the opposite gender and 1 participant from organization A was not asked this question. The gender of the participants was taken into account in the analysis of this answer.

Six participants, 3 from organization A, 1 from organization B and 2 from organization C find communication with a group easy. Six participants, 1 from organization A, 3 from organization B and 2 from organization C find it difficult, whereas 3 participants, one from each organization, were not asked the question.

Thirteen participants, 5 from organization A, 5 from organization B and 3 from organization C, say that nonverbal communication is cultural, a participant does maintains that nonverbal

communication is not cultural and a participant does not observe nonverbal communication. When asked whether nonverbal behaviour is cultural this is what a participant had to say:

BJ: “Yes I am sure, but I wouldn’t be able to tell you in what ways. Oh I guess it’s just a way of expressing myself and people use a lot of different ways to express themselves.”

According to participants nonverbal communication expresses cultural behaviour through posture, speech acts, eye movement, smiling, sitting, hand movements, and head movement.

Four participants from organization A, 1 participant from organization B and 1 participant from organization C find communication with team members who have different skills easy. Seven participants, 1 from organization A, 4 from organization B and 2 from organization C, find communication with team members who have different skills difficult. Two participants from organization C were not asked this question. Communication with team members who have different skills facilitates learning and develops a common understanding among participants. This is what a participant had to say on communication across skill-sets:

CRA: “Uhm, it’s not I can be difficult depending on what you trying to explain and so I’m quite aware of a process of some you got to have some strategy to put this across in a way that they’ll understand. I am aware of that we get it quite often here in the office where you got to put something together for someone who don’t understand or it’s the first time they doing it. So I’m kind of aware of the people might not understand initially or they won’t relate to me or just then you have to put it in a way that they understand.”

In terms of communication with people with different technological experience, only 7 participants were asked this question. Four participants, 1 from organization A, 1 from organization B and 2 from organization C, found communication with team members who have different technological experience difficult. Three participants, 1 from organization A and 2 from organization B found communication with team members who have different technological experience easy.

Seven participants, 3 from organization A, 1 from organization B and 3 from organization C express that age influences communication behaviour with team members with 4 participants, maintaining that it influences their communication negatively. Seven participants, 2 from organization A, 3 from organization B and 2 from organization C, maintain that they are not influenced by age at all in communication acts.

BG: “possibly, I think maybe more with the experience, I think eh, its possible. Maybe with an elderly person who has had a lot of experience who’s generally very highly regarded maybe. It’s it’s maybe I can maybe chat casually with a peer or fellow colleague you know when meeting someone maybe CEO or manager, that’s different.”

Although some few participants respect elders, most participants maintain that knowledge and skills are highly respected across the organizations rather than age in years. One participant from organization B was not asked this question.

5.3.4 What is the understanding on information systems development?

These questions investigate the ISDMs utilized by the team and the participants' understanding of those methodologies. The detail codes of these answers are given in table D – 6 in Appendix D. Once again the detail codes represent parts of answers and the categories represent broader views. The number of participants supporting a viewpoint is given for each organisation. These questions on ISDM generated much unstructured technical discussion. Although the term ISDM is not well-known by participants, they are using prescribed methods. Table 5 – 22 represent the questions, type, categories and count on ISDM.

Table 5 - 22: Information system development

Question	Question Type	Category	Count
40. Do you use an information system development methodology (ISDM) when developing information systems?	1	Category 40-1: ISDM used	1A, 3B, 4C
		Category 40-2: No ISDM usage	4A
		Category 40-3: ISDM unknown	2B, 1C
40.1. What type of ISDM do you use?	3	Category 40.1-1: ISDM types used	4A, 4B, 4C
		Code	Count
		<ul style="list-style-type: none"> • System development life cycle • No OSAS usage • Internal standards • Object-oriented methodology (OOM) • OOM not used • Various individual answers 	2B, 1C 1A, 2B 3A 2B 2C See Table D - 6
		Category 40.1-2: ISDM unknown	1A, 1B, 1C
41. How familiar were you with the tools and techniques used in the ISDM followed?	1	Category 41-1: Familiar with ISDM tools and techniques	2B, 1C
		Category 41-2: Not familiar with ISDM tools and techniques	1A, 1C
		Category 41-3: Question not asked	4A, 3B, 3C
42. Do you think ISDM improves the ISD process? How does ISDM improve the ISD process?	1	Category 42-1: ISDM improves ISD process	4A, 3B, 3C
		Category 42-2: Question not asked	1A, 2B, 2C

Finding 6:

All participating older people did not know what information system development methodologies were, younger people were able to name the methodology, but there were contrasting views within a team on which methodologies are used leading to the conclusion that methodologies are either used only by specific individuals or that they are not identified correctly.

Discussion on finding 6: information system development

Most participants (8), 1 from organization A, 3 from organization B and 4 from organization C, use an information systems development methodology (ISDM) and 4 participants from organization A do not use an ISDM. The 3 older participants, 2 from organization B and 1 from organization C did not know what an ISDM is.

Twelve participants, 4 from organization A, 4 from organization B and 4 from organization C, elaborated on the types of ISDMs used within their organizations. This is in contrast to the answer of the first question but in most cases discussion took place on the meaning of the term ISDM. Different ISDM used in IS development include object oriented methodology (2), iterative process (3), Prince 2 (1), OSAS (1), internal standards (4), Rapid application development (RAD) (1) and Structured ISDM (2). Two participants respectively disputed the use of Prince 2 and OSAS ISDMs within their organizations. Differing accounts of what information system development methodologies are used in organization was obtained from the participants. Sometimes it seems like everyone within an organization uses a different ISDM.

The question asking participants how familiar they were with the ISDM was not asked to 10 participants since they either maintained that an ISDM was not used or its unknown. Of the 5 who were asked this question 3 were familiar and 2 were unfamiliar with ISDM product. Of the 3 participants who were familiar with ISDM only 1 had gone on training,

All ten participants asked about ISDM importance, 4 from organization A, 3 from organization B and 3 from organization C, maintains that an ISDM improves ISD process and gave different reasons for this. An ISDM improves information system development process because it ensures the same standard of ISD; it minimizes mistakes; it defines a way of doing things; it provides project schedule, facilitate project monitoring and early reaction to project deviations. An ISDM minimizes project failure rate.

BG: "Uhm, Yeah, I think it does and one of the reasons being it makes it easy to monitor it, when things go wrong it makes it easy to correct it."

5.3.5 What is the effect of intercultural communication on information system development team performance?

These questions aim to understand how performance of a diverse ISD team is affected by intercultural communication between team members as well as how culture influences their performance. The questions also aim to discover how individuals view their own performance towards the team performance and how individuals deal with non-performing team members and cultural conflicts to ensure positive team performance.

The detail codes of the answers to these set of questions are given in table D – 7 in Appendix D. Once again the detail codes represent parts of answers and the categories represent broader views. The number of participants supporting a viewpoint is given for each organisation. These results are represented in table 5 – 23.

Table 5 - 23: Intercultural communication in information systems development teams

Question	Question Type	Category	Count
43. What are the advantages of a multicultural ISD team when compared to a homogeneous team?	2	Category 43-1: Advantages of multicultural team	4A, 3B, 3C
		Code	Count
		• Multicultural team illicit different viewpoints	1A, 3B, 4C
		• Multiculturalism facilitates learning	2A, 2B, 2C
		• Multicultural interaction improves cultural awareness	2A, 2B, 1C
		• Multicultural team promotes problem solution	1B, 2C
		• Multiculturalism promotes fresh ideas	1B, 1C
		• Various individual answers	See table D - 7
		Category 43-2: All cultural teams are the same	1A, 1C
		Code	Count
		• Culture does not influence work	1A, 1C
		• Multicultural and homogeneous teams implementation the same	2C
		• All cultures work the same	2C
• Various individual answers	See table D - 7		
Category 43-3: Disadvantages of homogeneity	1A, 1C		
Code	Count		
• Homogeneity facilitates same viewpoint	1A, 1C		
• Various individual answers	See table D - 7		
Category 43-4: Question not answered	2B		
44. What are the	2	Category 44-1: Advantages of	4A, 2B, 2C

Question	Question Type	Category	Count
disadvantages of a multicultural ISD team when compared to a homogeneous team?		homogeneity	
		Code	Count
		<ul style="list-style-type: none"> Homogeneous language makes communication easier Homogeneous friendships thrive Various individual answers 	4A, 2B, 2C 3A, 1C See table D - 7
		Category 44-2: Multicultural and homogeneous culture teams are the same	1A, 1C
		Code	Count
		<ul style="list-style-type: none"> Culture does not influence work Multicultural and homogeneous teams implementation the same All cultures work the same Various individual answers 	1A, 1C 2C 2C See table D - 7
		Category 44-3: Disadvantage of multicultural teams	3A, 4B, 2C
		Code	Count
		<ul style="list-style-type: none"> Multicultural members suffer misunderstandings Religious culture can cause clashes Multicultural team experience difficulty in achieving consensus Various individual answers 	1A, 1B, 1C 1A, 1B 1A, 1C See table D - 7
		Category 44-4: Question not answered	1B, 2C
		45. What performance measures are used to measure ISD team performance?	2
Code	Count		
<ul style="list-style-type: none"> Team performance measure: completed projects Team performance measure: effort Team performance measure: quality Team performance measures: completed tasks Team performance measures: delivery-oriented Balanced scorecards used to measure performance Team members rate each other Team performance measure: time Team performance measure: costs Team performance measure: project success or failure Various individual answers 	3A, 1B 1A, 1B, 2C 1A, 2B, 1C 2B, 2C 1B, 2C 3A 2A 1A, 1B 1A, 1B 1B, 1C See table D - 7		
Category 45-2: No team performance measures	2A, 2B, 1C		

Question	Question Type	Category	Count
		Category 45-3: Question not asked	1A, 1B, 1C
46. Do you think that a multicultural team should have less strict performance measures than a homogeneous team?	1	Category 46-1: Same performance measures for all teams	4A, 2B, 4C
		Category 46-2: Different performance measures for multicultural teams	1A, 1B
		Category 46-3: Question not asked	2B, 1C
47. How important is your individual performance when working in a team?	2	Category 47-1: Importance of individual performance	5A, 4B, 4C
		Code	Count
		<ul style="list-style-type: none"> Individual performance is important 	5A, 4B, 4C
		<ul style="list-style-type: none"> Individual performance improves the team 	3A, 1B
		<ul style="list-style-type: none"> Team brings richness to individual 	2A
		<ul style="list-style-type: none"> Various individual answers 	See table D - 7
		Category 47-2: Individual performance hampers	1A, 1C
		Code	Count
<ul style="list-style-type: none"> Various individual answers 	See table D - 7		
		Category 47-3: Question not asked	1B, 1C
48. How does your culture influence your individual performance in the team?	2	Category 48-1: Culture does not influence individual performance	3A, 1B, 4C
		Category 48-2: Influence of culture on work performance	2A, 3B
		Category 48-3: Question not asked	1A, 1B, 1C
49. How does communication affect performance of a multicultural team?	3	Category 49-1: Effects of communication performance	2B, 3C
		Code	Count
		<ul style="list-style-type: none"> Various individual answers 	See table D - 7
		Category 49-2: Question not asked	5A, 3B, 2C
50. How do feel when team member with the same cultural background as you is not performing well?	1	Category 50-1: Sympathetic to homogeneous culture colleagues	1A, 1B, 1C
		Category 50-2: Culture does not matter in performance	2A, 3B, 3C
		Category 50-3: Discussed actions towards non-performer	2A, 4B, 4C
		Category 50-4: Question not asked	2A, 1B, 1C
51. How do feel when team member with a different cultural background as you is not performing well?	1	Category 51-1: Culture of non-performer is unimportant	3A, 3B, 3C
		Category 51-2: Unsympathetic to heterogeneous non-performer	1A, 1B
		Category 51-3: Discussed actions towards non-performer	2A, 5B, 4C
		Category 51-4: Question not asked	1C
52. Should every team member be treated the same in terms of performance appraisal?	1	Category 52-1: Same treatment for all team members	3A, 3B, 4C
		Category 52-2: Different treatment for individuals	1A, 1B
		Category 52-3: Question not asked	1A, 1B, 1C

Question	Question Type	Category	Count
53. Is the culture of your project leader important as yours? Would you rather work with somebody with the same culture as you?	1	Category 53-1: Project leader culture important	1A, 2B, 2C
		Category 53-2: Project leader culture unimportant	4A, 2B, 3C
		Category 53-2: Question not answered	1B
53.1. Would you rather work with somebody with the same culture as you?	3	Category 53.1-1: Homogeneous leader preferred	1A, 1B, 1C
		Code	Count
		<ul style="list-style-type: none"> Homogeneous leader preferred Various individual answers 	1A, 1B, 1C See table D - 7
		Category 53.1-2: Heterogeneous leader preferred	1B, 1C
		Code	Count
		<ul style="list-style-type: none"> Diverse leader preferred Never had project manager of own culture Various individual answers 	1B, 1C 1A, 1B, 1C See table D - 7
		Category 53.1-3: Project leader culture unimportant	4A, 2B, 3C
		Code	Count
		<ul style="list-style-type: none"> Race unimportant in interaction with colleagues Various individual answers 	1A, 1C See table D - 7
		Category 53.1-4: Project leader culture unimportant	1B
54. Have you experienced conflicts that you can link to cultural differences?	1	Category 54-1: Cultural conflict arise	1A, 3B, 4C
		Category 54-2: No cultural conflict	4A, 2B, 1C
54.1. Tell us about it? How did you address the problem?	3	Category 54.1-1: Cultural conflict experiences	3A, 2B, 4C
		Code	Count
		<ul style="list-style-type: none"> Various individual answers 	See table D - 7
55. What can be done to improve the performance of an ISD team?	3	Category 55-1: Ways of improving ISD team performance	2A, 3B, 4C
		Code	Count
		<ul style="list-style-type: none"> Improving team performance: mutual understanding and tolerance Team performance improved by team-building Various individual answers 	1A, 1C 2C See table D - 7
		Category 55-2: Question not asked	3A, 2B, 1C

Finding 7:

Most people are positive about multicultural teams and find it easy to name benefits of such teams. Most people are focussed on individual performance and are focused on individual

characteristics rather than on culture when answering general questions. Half of the people interviewed experienced some cases of conflict that can be attributed to cultural difficulties.

Discussion on finding 7: the effect of intercultural communication in ISD team performance

Ten participants listed the advantages of a multicultural team. According to participants multiculturalism promotes different viewpoints, intercultural learning, cultural awareness, problem solving methods, and creativity among others. Eight participants, One participant from organization A, three participants from organization B and four participants from organization C maintain that multiculturalism illicit different viewpoints. Two participants from organization A, two participants from organization B and two participants from organization C maintain that multiculturalism promotes learning. Two participants from organization A, two participants from organization B and one participant from organization C maintain that multiculturalism promotes cultural awareness. One participant from organization B and two participants from organization C argue that multiculturalism promotes problem solving methods. One participant from organization B and a participant from organization C maintain that multiculturalism promotes creativity. A participant maintains that experience in long-term multicultural team promotes better interaction. This is what he had to say:

CD: “No no not at all especially if you been worked together for years then you will be able to understand each other better I think.”

According to 2 participants, 1 from organization A and 1 from organization C maintain that a culturally homogeneous team has the same worldview and same viewpoints. This is what a participant had to say:

CD: “Ja okay uhm what I mean by that is let’s say for example everyone come from the same background and the same culture they would think the same way. Okay. So. they thought backings would be generally, generally, they will think along the same lines but, if someone else can just offer advise that just from a different point from a different point of view, offers their advise that really makes a difference. So.”

Two participants, 1 from organization A and one from organization C argue that multiculturalism does not affect the way that a team works. They maintain that all cultures approach work the same.

CM: “I don’t know I really don’t see it in the team I think the calibre of person is or the person not the person the type of person is very similar you know when we do tests before we get employed. But I don’t know what you mean.”

Interviewer: “I’ve to take you on a bit. But you just said that you prefer working in a multicultural environment now you say they are all the same.”

CM: “No I mean from how they do their work they’re the same I mean about the things if we standing around having tea the things that you pick up or you know when it’s important Muslim holiday for example we will get Muslim food for that day someone will bring in that food that his wife has cooked it the guy who’s a Muslim is no longer here he left the company but I you know we learn about each others’ religious holidays we learn about each others uhm you know that kind of thing that’s what I mean I’m not talking about our attitude towards our jobs or how we go about that’s what I mean.”

Two participants, 1 from organization A and 1 from organization C maintain that the major disadvantage of homogeneity is that it facilitates the same viewpoint.

According to participants advantages of a homogeneous team are language and friendships. Four participants from organization A, 2 participants from organization B and 2 participants from organization C maintain that in homogeneous teams a homogeneous language made things easier whereas a heterogeneous team experiences communication difficulties due to language.

The disadvantages of a multicultural team are that intercultural team suffers misunderstandings, religious clashes and have difficulty achieving consensus. According to 3 participants, 1 from each organization, multicultural team suffers misunderstandings. The view that religious clashes are a disadvantage to a multicultural team is held by 2 participants, 1 from organization A and 1 from organization B. participants, 1 from organization A and 1 from organization B maintain that a multicultural team have difficulty achieving consensus. A participant from organization C maintains that multicultural team members may also mislead others about what is culturally offensive or not. This is what she had to say:

CRU: “Maybe people may take advantage if you don’t know that something is offensive in another culture.”

In terms of team performance, two participants from organization A, 2 participants from organization B and 1 participant from organization C expressed that team performance is not measured but rather individual team member performance is measured. Fourteen participants, 4 from each organization, listed performance measures used in their teams. Performance measures used across organizations by team members include completed projects, effort, quality, completed tasks, delivery-oriented, balanced scorecard, team members rate each other, time, costs, and overall project success.

Ten participants, 4 from organization A, 2 from organization B and 4 from organization C, maintain that multicultural teams should have the same performance standards as homogeneous teams. Two participants, 1 from organization A and 1 from organization B, maintain multicultural teams should be treated leniently in terms of performance management. A participant has the view that participants with the same opportunities should get the same treatment in terms of performance measures. AMO clearly articulates this view when asked this question:

AMO: “You know I think if historically because we came from been different exposures maybe I would say being unique in my understanding with type of people because they didn’t have this kind of exposure. But I think with time we all get the same equal of opportunities. I just feel that a person should be judged on, on everyone should be judged.”

Interviewer: “but the group, if you have a homogeneous group should they have less time to do the same job as a multicultural group?”

AMO: “If that group had the same opportunities as the other one I don’t see, I don’t think they should be judged differently if there were definitely had, disadvantages then I would say yes you need to take that in consideration.”

All the 13 participants asked this question maintain that individual performance is important to team performance. Individual performance can either improve or delay the project. Two participants, 1 from organization A and 1 from organization C, also expressed how individual performance can hamper team performance. Individual performance can delay the team performance through incomplete tasks, minimized quality, taking leave, and individual lateness. Individual performance can enhance team performance through individual success is the assertion of one participant:

BJ: “I truly believe that it influences that, how you perceive what your contribution is worth. I mean, for me I value my personal contribution from a technical point, whereas other people have other skills. No, no its ... I am sure it does but I don’t know any.”

Eight participants, 3 from organization A, 1 from organization B and 4 from organization C, have the view that culture does not influence individual performance. This is what a participant had to say:

BJ: “I don’t know how it differs from managing just individual people. Look at different people, people really have different personalities. To give you, if you are a manager of such a team, communication has to be really good in terms of, of, of getting feedback and what progress, what progress has been made. Getting people motivated too. I don’t know. I, I for me I don’t think it differs really from managing individuals. I guess it’s pretty much the same, same approach.”

Five participants had the view that culture influences performance. A participant from each organization was not asked this question.

Due to time constraints only five participants were explicitly asked on the role of communication in multicultural teams. Participants from organisation C argued that communication within a multicultural team minimizes misunderstandings and facilitates learning thereby improving team performance. Communication within a multicultural team is influenced by language and a good manager. Communication might be negatively influenced by language if the participants are not as fluent each other when interacting according to a participant from organisation B.

The 11 participants were asked about non-performance of homogeneous team member; 3 participants, one from every organization were sympathetic with a homogeneous non-performer and the other 8 participants, 2 from organization A, 3 from organization B and 3 from organization C, culture is not important in non-performance. Individual participants speak privately with the non-performer according to 3 participants, two from organization B and 1 from organization C. Three participants, 2 from organization A and 1 from organization B, argue that another way to address non-performance is for the team to find its root cause. Two participants, 1 from organization A and 1 from organization B, take no action against non-performance.

Nine participants, 3 from each organization maintain that the culture of the non-performer is not important in determining their feelings. A participant from organization A and a participant from organization B maintain that homogeneous culture does not mean homogeneous behaviour. A participant from organization A, a participant from organization B and a participant from organization C are unsympathetic to heterogeneous non-performers. Four participants, 3 from organization B and 1 from organization C, do nothing about the non-performer. Three participants, 2 from organization B and 1 from organization C, suggest speaking privately with the non-performer. Another way to address non-performance is for the team to find its root cause, according to 4 participants.

Ten participants, 3 from organization A and B each and 4 from organization C maintain that everyone should be treated the same in terms of performance appraisal. One participant from organization A and one participant from organization B maintain that individuals should be treated differently in terms of performance appraisal. A participant from each organization was not asked this question.

The culture of the project leader is unimportant to 9 participants, 4 from organization A, 2 from organization B and 3 from organization C. Five participants, 1 from organization A, 2 from organization B and 2 from organization C, maintain that the project leader culture is important. One participant from organization A maintains that project leader culture importance is dependent on the situation. One participant did not answer the question.

Three participants, one from every organization would prefer a homogeneous culture leader, and 3 participants, 1 from organization A and 2 from organization C, would prefer a heterogeneous culture leader. Nine participants, 4 from organization A, 2 from organization B and 3 from organization C, would work with a project leader of any culture.

Cultural conflict has been experienced by 8 participants, 1 from organization A, 3 from organization B and 4 from organization C, although 2 of them said it was minor conflict. Eight participants, from organization A, 2 from organization B and 2 from organization C, said conflicts were not rooted in culture even though conflicting team members may be multicultural.

Individual participants maintain that cultural conflict occurs as a result of, but not limited to religion, cultural artefacts e.g. clothes or food, gender, skill level and speech acts e.g. patronizing tone. This is what a participant had to say:

CM: "I have had one incident when I was working in account management I was working with a man, a black man, he was new in the team and he was helping me with a thing and we had words and I luckily there were other people around and he accused me of, he got upset with me for the way I spoke to him and in a patronizing tone or something. I can't remember all the details but luckily there were other people because, again, you know, very on the defensive, cause you try to think did you, I say it like that. Did your tone and a bit it actually end up become an issue where it could just be a personality clash fight or it became a race issue, uhm which can become quite ugly but we managed to resolve it very quick. I escalated it very quick. we brought in the people that were in around so that we can get a fair side off both sides of the story that's the one and only time I could have managed to sort it out it was a long time ago I hadn't touch wood since then."

Nine participants asked this question, 2 from organization A, 3 from organization B and 4 from organization C, expressed different opinions on improving team success. According to individual participants, team success can be improved by mutual understanding and tolerance, team-building, openness, motivation, rewards, team development, increasing team, interaction among team members, tolerance, lessons learnt, communication, user involvement, recruiting the right people and finally individual focus on work.

5.3.6 What is the effect of intercultural communication on information system development team dynamics?

These questions sought to understand the teams dynamics that affect the teams and discover how these affects multicultural teams. The detail codes of these answers are given in table D – 8 in Appendix D. Once again the detail codes represent parts of answers and the categories represent broader views. The number of participants supporting a viewpoint is given for each organisation. Some participants expressed views that can be in support of more than one category; therefore the numbers of participant per question may exceed the total for the organization. Table 5 – 24 presents these results.

Table 5 - 24: intercultural communication and information system development team dynamics

Questions	Question type	Category	Count
56. Do you spend time with team members outside the project?	1	Category 56-1: Socialize with team members outside work	2A, 2B, 3C
		Category 56-2: Limited socialization with team members outside work	2A, 3B, 1C
		Category 56-3: No socialization with team members outside work	1A, 1C
57. What team characteristics do you think are useful for team success?	3	Category 57-1: Useful team characteristics	4A, 3B, 3C
		Code	Count
		<ul style="list-style-type: none"> • Team characteristics: motivation • Team characteristics: self-management • Team characteristics: common goals • Team characteristics: mutual respect • Various individual answers 	1A, 2B 2A 1A, 1C 1A, 1C See table D - 8
		Category 57-2: Question not asked	1A, 2B, 2C
58. What team structure is usually used in ISD teams that you have participated in?	2	Category 58-1: Chief programmer team	1A, 2B, 1C
		Category 58-2: Flat team structure	1A, 3C
		Category 58-3: Project team structure	3A
		Category 58-4: Hierarchical team structure	1B, 2C
		Category 58-5: Question not asked	2B
59. Have you experienced subgroups in an ISD team? Can you tell us about it?	1	Category 59-1: Experienced social subgroups in ISD teams	1A, 4B, 3C
		Category 59-2: Experienced no social subgroups in ISD team	2A
		Category 59-3: Question not asked	2A, 1B, 2C
60. What roles have you played in ISD teams that you have participated on?	2	Category 60-1: Roles played in ISD teams	5A, 5B, 5C
		Code	Count
		<ul style="list-style-type: none"> • Data developer • Business analysts • Code reviewer • Data modeller • Line Manager • Leaner developer • Programmer • Systems architect 	3A, 4B, 2C 1B, 3C 1A 1A 1A 1A 1C 1C

Questions	Question type	Category	Count
		<ul style="list-style-type: none"> Project leader User interface specialist 	1B 1B
61. Are team members allocated roles based on the culture of ISD participants?	1	Category 61-1: Culture does not affect role assignment	4A, 5B, 5C
		Category 61-2: Question not asked	1A
62. Have you experienced team norms that clash with your own culture?	1	Category 62-1: Experienced norms that clashes with culture	2A, 1B, 3C
		Category 62-2: Did not experience norms that clashes with culture	2B, 2C
		Category 62-3: Question not asked	3A, 2B
63. What team size do you think is reasonable to allow good team communication?	1	Category 63-1: Small team size	1A, 2C
		Category 63-2: Medium team size	1A, 1B, 2C
		Category 63-3: Large team size	1A, 2B, 1C
		Category 63-4: Question not asked	2A, 2B
64. What team building exercises have you been involved in? Were the team building exercises culturally acceptable / offensive to you? How did you react to that?	1	Category 64-1: Team exercises culturally acceptable	2A, 1B, 3C
		Category 64-2: Team exercises culturally not acceptable	1B, 1C
		Category 64-3: No team building exercises	1A, 1C
		Category 64-4: Question not asked	2A, 3B
65. What would you say is your personality type?	1	Category 65-1: Introvert	1A, 1B, 2C
		Category 65-2: Extroverted	2A, 4B, 3C
		Category 65-3: Question not answered	2A
66. How does your personality influence your culture?	3	Category 66-1: Influence of personality on culture	3A, 2B, 5C
		Code	Count
		<ul style="list-style-type: none"> Personality influences culture Personality influence work performance Personality types are general across cultures Various individual answers 	2B, 2C 2A 1A, 1C See table D - 8
		Category 66-2: Question not asked	2A, 3B
		Category 66-3: Question not asked	2A, 3B
67. How does your culture influence your personality?	1	Category 67-1: Influence of culture on personality	4A, 4B, 3C
		Category 67-2: Culture has no influence on personality	1C
		Category 67-3: Question not asked	1B, 1C
68. How does your personality type influence how you communicate with team members from a different culture as yours?	3	Category 68-1: Influence of personality type on communication with members of different culture	5A, 3B, 4C
		Code	Count
		<ul style="list-style-type: none"> Conflict personality-based Behaviour is cultural and personality based Personality speaks freely and openly Correct personality mix makes a 	1A, 3C 3A 1A, 2C 1A, 1C
		Category 68-2: Question not asked	2A, 3B

Questions	Question type	Category	Count
		good team • Personality influences communication with team members • Personality causes clashes • Various individual answers	2B 2C See table D - 8
		Category 68-2: Question not asked	2B, 1C
69. How does your personality type influence how you communicate with team members from a similar culture as yours?	1	Category 69-1: Influence of personality type on communication with members of the similar culture	1A, 2B, 1C
		Category 69-2: Personality does not influence communication behaviour for or against a specific culture	3C
		Category 69-3: Question not asked	4A, 3B, 1C
70. What steps were taken by the organization to ensure cohesiveness in teams?	3	Category 70-1: Steps taken by the organization to ensure team cohesion	3A, 2B, 2C
		Code	Count
		• Team working well together • Diversity training • Various individual answers	3A 1B, 1C See table D - 8
		Category 70-2: Question not asked	1A, 3B, 3C
71. How does the team resolve disagreements / conflict in ISD teams?	1	Category 71-1: Typical Conflict resolution strategies	4A, 5B, 3C
		Code	Count
		• Conflict resolution through intervention	2A, 4B, 3C
		• Conflict resolution through smoothing	1A, 1B
		• Conflict resolution through withdrawal	1A, 1C
		• Conflict resolution through confrontation	1A, 1B
		• Conflict resolution through compromise	1A, 1B
• Conflict resolution individually	2A		
Category 71-2: No conflict resolution mechanisms	1A		
Category 71-3: Question not asked	2C		
72. Does culture play a role in setting realistic expectations?	2	Category 72-1: Culture plays a role in setting realistic expectations	3A, 4B, 2C
		Category 72-2: Question not asked	2A, 1B, 3C
73. What role does culture play in the ownership of ISD problem?	1	Category 73-1: Culture influence problem ownership	2A, 3B, 3C
		Category 73-2: Culture does not influence problem ownership	1B, 2C
		Category 73-3: Question not asked	3A, 1B

Finding 8:

People have a good understanding on team aspects such as roles, performance and conflict resolution. There are different views on the relationship between personality and culture. When

people give detailed accounts of experiences some refer to negative experiences linked to different cultures.

Discussion on finding 8: the effect of intercultural communication on ISD team dynamics

Seven participants, 2 from organization A, 2 from organization B and 3 from organization C, socialize with team members outside work. Six participants, 2 from organization A, 3 from organization B and 1 from organization C, have limited socialization with team members outside work, only 2 participants said that they did not socialize with multicultural team members outside work. Of these 2 participants, one is a new mother and another is a postgraduate student. One of them had this to say.

BA: “Not now. I am currently studying for my masters, so I come to work and I study after work. I don’t have much of a social life.”

Most of these socialization events are organized at work. In these social settings homogeneous friendships thrive according to 4 participants from 3 organization A and one participant from organization C.

Ten participants, four participants from organization A, 3 participants from organization B and 3 participants from organization C expressed different characteristics that are useful for team success. Characteristics that are useful for team success include motivation, self-management, common goals and vision, mutual respect, role assignment, individual success, devotion, meeting objectives, support, togetherness, tolerance, and finally communication.

Five participants from organization A, 3 participants from organization C and 2 participants from organization B had varying accounts of what team structure was used within their organizations. Team structures used include chief programmer teams (4), flat structure (4), project team (3) and hierarchical structure (3). Two participants were not asked about the team structure.

Eight participants, 1 from organization A, 4 from organization B and 3 from organization C had experienced subgroups in the team. Two participants from organization A said there were no cliques in their teams and this was attributed to small team size that does not permit the formation of teams. Some of the reasons why social subgroups are formed are due to common interests such as smoking and language, common sympathies, skills, cultural identity, work assignment and common goals and vision. This is what a participant had to say when asked about social subgroups in the ISD team.

AF: “I would say so yeah. It doesn’t really [halt] I think we all get together and work together very well but I mean if it’s the same language, same culture it makes it a little bit easier but there is no sense that it is not easy talking to the others.”

Two participants from organization A had not experienced any social subgroups in the ISD team. The question was not asked to five participants, two participants from organization A, a participant from organization B and two participants from organization C.

Participants had played different roles in their organization. Roles occupied by participants includes data developer (3 from organization A, 4 from organization B and 2 from organization C), participants from organization A have roles such as code reviewer, data modeller, line manager and a learner developer. Participants' roles in organization B include business analysts, a project leader and a user interface specialist. Three participants from organization C are business analysts; other roles include programmer, and systems architect,

All fourteen participants asked whether culture affects role assignment, agree that culture is insignificant when allocating roles to team member. The team member roles are based on IS specialization, skills, experience and knowledge, team member availability and team member preferences.

BA: "I was chosen based on my expertise. The fact that I am from Botswana and understand the people and the environment was a bonus."

A participant in organization A was not asked this question.

Six participants, 2 from organization A, 1 from organization B and 3 from organization C, had experienced team norms that clash with their culture. Four participants, 2 from organization B and 2 from organization C, have not experienced team norms that clash with their culture. Team norms that clash with culture are cultural artefacts e.g. non-vegetarian meals and alcohol at team-building activities, and weekend work, especially Sundays for some Christians. The question was not asked to 4 participants, 2 from organization A and 2 from organization B.

Three participants, 1 from organization A and 2 from organization B prefer a smaller team with 5 or less members. Four participants, 1 from organization A, 1 from organization B and 2 from organization C, would prefer a medium team size of between 5 and 9 members. Four participants, 1 from organization A, 2 from organization B and 1 from organization C, would prefer a larger team size with more than 9 team members. Four participants were not asked this question or were unclear.

Six participants, 2 from organization A, 1 from organization B and 3 from organization C, maintain that team-building activities are not culturally offensive. Two participants, 1 from organization B and 1 from organization C, find team-building activities culturally offensive. Two participants, 1 from organization A and 1 from organization C, maintained that their organization does not have team building exercises. Five participants, 2 from organization A and 3 from

organization B, were not asked the question. Team-building activities include playing games, headlining, braai, formal dining. Some team building activities are offensive to participants, e.g. non-vegetarian meals for vegetarians and alcohol to teetotallers.

Four participants, 1 from organization A, 1 from organization B and 2 from organization C, are introverts. Nine participants, 2 from organization A, 4 from organization B and 3 from organization C, are extroverts. Two participants from organization A did not answer this question. Personalities are the same across cultures. Personality and culture are intertwined, one is partly born with personality and partly learns it whereas culture is completely learnt (Hofstede, 2005:40). In this study most participants (9) were extroverts, which is contrary to the contention that 75% of IS professionals are introverts (Schwalbe, 2011:365).

Ten participants, 3 from organization A, 2 from organization B and 5 from organization C, maintain that personality influences culture. Two participants from organization A and 3 participants from organization D were not asked this question. Culture influences personality by influencing the mind-set and language. Culture and religious culture influence acceptable cues of behaviour. When asked this question this is what a participant had to say:

CM: “No. I don’t think so. I mean I think some cultures are probably more conservative than other uhm but yet in a more conservative culture you have people with very vibrant personalities more uhm withdrawn personalities I don’t think so I think no matter what you culture your personality as in it in an way that you relate to people or the way you come across in personality.”

Eleven participants, 4 from both organization A and B and 3 from organization C, maintain that culture influences personality. One participant from organization C say culture does not influence personality and two participants, from organization A and from organization B were not asked this question. Culture is a frame of reference for personality. Expression of personality is cultural. AL and AP said this when asked this question:

AL: “eh. No. it depends, you got, obviously I think personality types are general across all people, all groups, but the way you express that personality, there is a difference among [unsaid word: cultures].”

AP: “I’ll say my culture influences my personality cause whatever I do in my personal space I still have to reference by my cultural background.”

Twelve participants, 5 from organization A, 3 from organization B and 4 from organization C, maintain that personality type influences communication with team members of different culture. Three participants, 2 from organization B and one from organization C, were not asked this

question. Personality characteristics that influence communication are: personality that speaks freely and openly; relates easily to others; ignored in communication acts because of introverted personality; and culture contributes to making communication difficult. Four participants, 1 from organization A and 3 from organization C, are of the view that conflict is as a result of personality and not culture. Some extroverted personalities communicate easily and those with introverted personalities have difficulty initiating communication with strangers. Homogeneous cultures may also experience personality clashes. This is what a participant had to say:

CRU: "I don't think so I think it's an individually thing it's important that HR find people with similar personalities that you can come from different cultures but or from the same culture but you might not be blend very well that's also possible."

Four participants, 1 from organization A, 2 from organization B and 1 from organization C, maintain that their personality influences how they communicate with team members from a similar culture. Three participants from organization C maintain that personality does not influence communication behaviour for or against a specific culture. Eight participants, 4 from organization A, 3 from organization B and 1 from organization C, were not asked this question due to time constraints.

Seven participants, 3 from organization A, 2 from organization B and 2 from organization C outlined the steps taken by the organization to ensure cohesiveness. A participant from organization A said there were no organizational efforts towards improving team cohesiveness. Seven participants, 1 from organization A, 3 from organization B and 3 from organization C, were not asked this question. Team cohesiveness is improved by diversity training, team-building, sharing work and responsibility. Three participants from organization A maintain that the team works well together. Two participants, 1 from organization B and 1 from organization C, said team cohesiveness is improved by diversity training. A participant from organization B said team cohesiveness is improved by diversity team-building. A participant from organization A said team cohesiveness improved by sharing work and responsibility.

The five conflict resolution mechanisms by Blake and Mouton, which are intervention, smoothing, withdrawal, confrontation and compromise (Schwalbe, 2011:400), are used within participating teams. Nine participants, 2 from organization A, 4 from organization B and 3 from organization C, said they use intervention as conflict resolution mechanism. Two participants, 1 from organization A and 1 from organization B, said they use smoothing as a conflict resolution mechanism. Two participants, 1 from organization A and 1 from organization C, said they use withdrawal as a conflict resolution mechanism. Two participants, 1 from organization A and 1 from organization B, said they use confrontation as a conflict resolution mechanism. Two participants, 1 from organization A and 1 from organization B, said they use compromise as a

conflict resolution mechanism. A participant from organization A said there was no conflict resolution mechanisms used in their organization and two participants from organization C were not asked this question.

All the nine participants, 3 from organization A, 4 from organization B and 2 from organization C, who were asked whether culture plays a role in setting realistic goals maintain that culture plays a role in setting realistic goals. Setting realistic goals is also influenced by education and personality traits. This is what a participant said when asked this question:

BA: "I think so. My project leader always says the project will take 2 weeks when we all know it will take four weeks."

Interviewer: "Why do you think it is because of his culture?"

BA: "He is Afrikaans and he is all about work. He really works hard. I am not trying to generalize. There are exceptions to every case. Some white people are lazy and some black people are even more hard-working than the white people."

Another participant had this to say:

AMO: "I think, I think it does, uhm, with certain things, you know. Like We, Like I'll give a specific example you know we got this data warehouse project we are under a lot of pressure, you know, and at times, I mean I know these people from India especially they will working 12 hours a day you know. Uhm which is not what you, you're supposed to work eight hours a day and of the eight hours 2 hours is supposed to be reserved for doing admin and meetings and that thing 6 hours you do your project work but because of these deadlines they were, but in India they are used to work these long hours so but I think local people, if you ask them they might do it for a while, but it think ask them to work 12 hours for long periods, I think they will have a issue with it they will either you pay me more or even I don't even want more money but I think it may be coming inhumane to expect a person so long for."

Six participants, 2 from organization A, 1 from organization B and 3 from organization C were not asked this question.

According to 8 participants, 2 from organization A, 3 from organization B and 3 from organization C, culture influences problem ownership whereas 3 participants, 1 from organization B and 2 from organization C attribute taking ownership of information system development problem to personality and education. Four participants, 3 from organization A were not asked this question and 1 from organization B did not respond.

5.3.7 What is the influence of the intercultural communication on the performance of an ISD team?

The overall finding of this study is that intercultural communication in ISD teams in general is open and people have a good understanding of intercultural communication between team members with heterogeneous cultural contexts such as gender, religion, age and ethnicity. Most people are positive about multicultural teams even though some have experienced cultural conflicts. They have a good understanding of team aspects such as roles, performance and conflict resolution. Even though it takes time people's culture are adaptable to new environments.

None of the organizations studied provided participants with intercultural training therefore participants must find their own means towards achieving successful performance. Research has shown that participants had difficulty in intercultural interactions initially when participating in new teams (Watson *et al.*, 1993) and some participants in this study expressed that they had intercultural problems when they started working.

5.4 Summary

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. In order to achieve this aim one needs to understand information systems research and to justify the selection of the chosen research methodology; to understand information systems development and ISD teams; to understand culture and communication; to understand what affects communication has between different cultures; to discover how cultural misunderstandings impact upon ISD team performance and to discover the steps taken to eliminate miscommunication due to cultural issues in organizations. This chapter addresses the aim of the study by providing the research question, results of the case for information systems development; it defines the case study and describes the concepts of culture, communication, information systems, information systems development, ISD teams and ISD team performance.

This chapter has presented the case studies that were conducted and analysed the results of the study. An interpretive case study was conducted in three organizations in Gauteng province of South Africa. Interviews were conducted by a two-woman multicultural dyad. The chapter outlines the profiles of the participants and the participating organizations, the interview questions and the entire preparation for the interviews.

The results of the study are presented and discussed in this chapter. The results have brought forth a lot of interesting information on intercultural ISD teams. The results show the views of participants on culture, communication and information systems development and their teams. The results also show an interesting relationship between personality, culture, communication and performance. The results address the questions on background, culture, communication, ISD, team dynamic and performance of ISD teams

The next chapter discusses the results of the study, concludes the study and makes recommendations. Chapter 6 is the final chapter in the study.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The aim of this study is to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. This study has endeavoured to address this aim by addressing the following objectives to: understand information systems research and to justify the selection of the chosen research methodology; understand information systems development and ISD teams; understand culture and communication; understand what effects communication has between different cultures; discover how cultural misunderstandings impact upon ISD team performance and discover the steps taken to eliminate miscommunication due to cultural issues in organizations.

This is the final chapter of this study and it presents the evaluation of the case study and the limitations of the study. It brings the study to its conclusion and makes recommendations stemming from the research findings and literature review.

Section 6.2 evaluates the case study using Myers and Klein's principles for evaluating case study research in information systems. Section 6.3 provides the limitations of the study.

Section 6.4 presents the conclusions to the study by addressing the research objectives in section 6.4.1 through to section 6.4.6. Section 6.4.1 describes information systems research and justifies the chosen study methodology. Section 6.4.2 provides some understanding on culture by describing the different views on culture, explaining how cultural contexts influence team performance and finally describing what the understanding is on the participants' religious culture. Section 6.4.3 provides some understanding on communication. Section 6.4.4 describes how communication is affected by different cultural contexts. Section 6.4.5 provides an understanding on information systems development and information systems development team dynamics. Section 6.4.6 describes how cultural misunderstandings impact upon ISD team performance. Section 6.4.7 explains the steps taken to eliminate miscommunication due to cultural issues in organizations.

Section 6.5 presents the recommendations that arise as a result of the literature and the case study. Section 6.6 provides a summary of the final chapter in the study and puts this study to rest.

6.2 Evaluating the case study research

This study has applied Klein and Myers' (1999:72) principles for evaluating case study research in information systems research. These principles are the principle of hermeneutic cycle, the principle of contextualization, the principle of interaction between the researcher and the subjects, the principle of abstraction and generalization, the principle of dialogical reasoning, the principle of multiple interpretations and the principle of suspicion (Klein and Myers, 1999:72). These principles are essential in case study research because they provide structure and rigour to the study. In this section the evaluation defines the principles by providing relevant information.

6.2.1 The principle of hermeneutic cycle

The principle of hermeneutic cycle, studies the individual's complete set of questions and specific answers in order to understand a person's view on culture, communication, information system development and intercultural communication in teams. The individual participant's responses in a specific environment were compared to that of other participants to better understand the specific participant's responses.

In order to understand a person's view on culture, we had to look at the individual's set of questions and the specific answers. We also had to study their communication skills to verify answers on communication. The case study had 73 interview questions which are outlined in section 5.2.3 in chapter 5 and also in Appendix D. During the data analysis we analysed each person's results, analyse the organization's results, and analyse the overall case study results. The interaction between the answer of 1 individual compared to the other participants were also studied. In the spreadsheet used in phase 1 of the analysis (refer table 5 -9) all the answers for a specific participant were kept together to be able to reflect on a specific answer in relation to the complete analysis of the participant's interview.

6.2.2 The principle of contextualization

The principle of contextualization is implemented in analysis by evaluating the answers to questions on the background of the organization and of the individual, i.e. participants' own personal and work experiences in multiculturalism.

The profiles of participants was determined in terms of race, gender, religion, age, job, description and home language and these are provided in tables 5 – 1 through to table 5 – 7 in chapter 5. Three organizations from the Gauteng province of South Africa participated in this study. The profile of the participating organizations is outlined in section 5.2.1 in chapter 5. The study had fifteen participants, five from each organization. The participants were members of information system development teams. The profiles of the participants are outlined in section 5.2.2. The work experiences of participants in a multicultural environment are reported on in section 5.3.1. Care was taken to allow the participant to give enough information during the interview to put the answer in context. As this led to side-discussions not all questions could be asked to all participants due to time constraints.

6.2.3 The principle of interaction between the researcher and the subjects

The principle of interaction between the researcher and the subjects outlines the methods of data collection and data analysis that were used to develop the findings of the research.

A multicultural team, consisting of two people, conducted the interviews at all the three organizations. The interviews were conducted more like informal conversations. At two organizations the interviews were held in a boardroom while at one of the organizations the interviews were conducted in the offices of the participants, giving the researchers an opportunity to observe the working environment. All the participants were relaxed during the interview with the exception of 1 participant who was reserved. A laptop and a microphone were used to record the interviews Windows moviemaker and Nero Soundtrax were used as recording software of choice. The researchers also took notes where necessary.

Interview transcripts were made using Microsoft Word. Data was analysed using content analysis. The data analysis software is Atlas/ti 5.0. The data from Atlas.ti was entered in a spreadsheet containing the all the questions and responses from all participants grouped according to the organization. Care was taken to add indication of silences and other auditable reactions to the transcription.

6.2.4 The principle of abstraction and generalization

The principle of abstraction and generalization recounts idiographic details in data interpretation by applying principle 1 & 2 to theoretical and common concepts describing the nature of human comprehension and social action. Data analysis uses content analysis to define categories and codes. The interviews were documented using Microsoft Office Word and saved as a rich text format so that they can be used with Atlas.ti 5.0. The services of a transcriber were used to document some of the interviews, the researcher transcribed the rest. The researcher checked all the transcriptions to ensure that they were correct. The interviews were listened to via Windows Media Player / Nero showtime and then typed into MS Word. The transcribed textual data was analyzed and the categories and the codes that have been created are produced in section 5.3 of chapter 5 and appendix D.

The analysis process was an iterative process. This iterative process happened throughout the four phases of data analysis. Phase 1 is where coding of the data in Atlas.ti 5.0 was done and this process was repeated several times. These codes were entered into an Excel spreadsheet showing all participants and their responses to specific question. Phase 2 involved grouping responses to the questions according to organization and this is presented in appendix D. Phase 3 derived key categories that support the main arguments of the individual participants. Phase 4 included carefully studying the data to deduce findings. Details of this process are given in section 5.3.

The findings are as follows:

Finding 1:

Even though most participants are from different cultural environments in terms of background, schooling, tertiary education and socialization and did not have intercultural training, two thirds of the participants did not experience culture shock and have similar frame of references and this leads to the conclusion that often people from different cultural background find the means of navigating their way into successful intercultural interaction.

Finding 2:

Culture is tacit in nature therefore participants have differing views on what is their culture and what is the culture of others.

Finding 3:

There are advantages of heterogeneous and homogeneous teams, while role of importance of gender is balanced; conflicts are sometimes attributed to cultural differences.

Finding 4:

Most participants (12) are religious but discussion of religion is not common in the workplace leading to the conclusion that religion is important to individuals but it is an intimate issue and therefore discussed only with some colleagues.

Finding 5:

Communication in general is open but culture and personality may affect the level of communication difficulty.

Finding 6:

All participating older people did not know what information system development methodologies are, younger people were able to name the methodology, but there were contrasting views within a team on which methodologies are used leading to the conclusion that methodologies are either used only by specific individuals or that they are not identified correctly.

Finding 7:

Most people are positive about multicultural teams and find it easy to name benefits of such teams. Most people are focussed on individual performance and are focused on individual characteristics rather than on culture when answering general questions. Half of the people interviewed experienced some cases of conflict that can be attributed to cultural difficulties.

Finding 8:

People have a good understanding of team aspects such as roles, performance and conflict resolution. There are different views on the relationship between personality and culture. When people give detail accounts of experiences some refer to negative experiences linked to different cultures.

6.2.5 The principle of dialogical reasoning

This section reports on the principle of dialogical reasoning by providing probable inconsistencies between literature and actual findings. The researcher's expectations based on the literature are matched against the actual findings of the research.

We had not anticipated that the group did not have any intercultural problems, especially initially when members are new to the team. From previous research (Watson *et al.*, 1993) the participants who did not have a multicultural upbringing were expected to experience group

process initially, from the experiences as recounted by the participants this was not the case. The participants maintained that they were ready for a multicultural environment and did not experience any problems, although they had not undergone intercultural training.

We had anticipated that the participants will be reserved at the beginning of the interview or when we told them about recording the interview, but this was not the case. Using a tape recorder may inhibit the participant and also the fact that the participants assess their trust of the interviewer during the first parts of the interview (Saunders *et al.*, 2003).

6.2.6 The principle of multiple interpretations

The principle of multiple interpretations provides the different accounts as told by different participants of the same phenomena. This is investigated in detail and reported on in this section.

The participants expressed multiple interpretations when the older participants did not know what an information system development methodology (ISDM) was but were familiar with the tools and techniques that were used to develop information system. The younger participants knew what an ISDM is, and they tried to fit the ISDM they use into their knowledge of methodologies, thereby giving different accounts of what is being used in the organization.

6.2.7 The principle of suspicion

The principle of suspicion evaluates the biases of the data and data collection process. This section reports on the biases of the data collection methods and the data.

A bias in this research is that the participants were chosen by the respective managers at different organizations and this serves as a limitation to the study as well. For example the participants chosen by a manager at one organization were all the same, they claimed that they had never experienced cultural issues at all, they all get along great even though informal conversations with others in the same organization gave a different view of this.

Another bias could be the need to be politically correct by team members, because some things are not politically right to say when in company of different cultures. Like one participant (of Indian descent) said:

AMO: “There are always issues, for example if I say something bad about Jacob Zuma, they might think I am a bit of a racist or whatever, but if she [points to an African woman] says it, it might be okay, ... same applies if I say something about Mr Rajbansy then it's okay but if she says it then she might be racist... I am a bit conscious in conflict with other people, but if something makes me unhappy then I'd be, if you did something and she did something, if it's wrong then it's wrong.”

The multicultural dyad could have been a hamper to our interviews. The participants might have been conscious of what they are saying because they did not want to appear politically incorrect.

Another bias could be faked sincerity, some of the participants told us, what they wanted us to believe about their team, not necessarily what was happening in the team. Participants may have specific preconceived ideas about the interview and as a result respond in a presumed correct or acceptable manner (Fielding & Thomas, 2008:249; Hussey & Hussey, 1997:157). According to Fielding and Thomas (2008:249) human beings frequently evade describing aspects of their actions or attitudes that are contradictory to their preferred self-image.

There was also an element of racial bias with about 3 of the participants but the multicultural interviewer team was able to address that, as the other interviewer could assist in rescuing the interview.

6.3 Limitations

The study was conducted using an interpretive, multiple case study and employed the interview technique to gather data. Because of the personal nature of interviews the results might be biased. In an interview even when we had assured participants that their responses are confidential there was still some reservations from some participants.

The researchers had no control over selecting the participants of the study. The managers were responsible for selecting participants for the study. This means that only people who met the manager's approval could participate in the study, possibly biasing the study results.

The difficulty in finding participating organizations might limit the study findings. The subsequent interviews that are guided by what we found out in other organizations were not possible due to time and availability. Interpretive study requires simultaneous data collection and analysis and this was difficult due to unwillingness to participate by organizations in this study. One of the managers mentioned intellectual property as one of the deterrents to participation in this study. Organizations want to maintain intellectual property of their business processes and not willing to share their trade secrets and therefore may not want to participate in this study. Some of the limitations have already been specified in section 6.2.7.

6.4 Conclusions

The overall finding of this study is that intercultural communication in ISD teams in general is open and people have a good understanding of intercultural communication between team members with heterogeneous cultural contexts such as gender, religion, age and ethnicity. Most people are positive about multicultural teams even though some have experienced cultural conflicts. They have a good understanding of team aspects such as roles, performance and conflict resolution. Even though it takes time people's cultures are adaptable to new environments.

None of the organizations studied provided participants with intercultural training therefore participants must find their own means towards achieving successful performance. Research has shown that participants had difficulty in intercultural interactions initially when participating in new teams (Watson *et al.*, 1993) and some participants in this study expressed that they had intercultural problems when they started working.

Section 6.2.1 up to 6.2.7 gives the conclusions to the study by addressing the objectives and findings from literature and the interpretive case study.

6.4.1 What is information systems research and justify research methods?

The objective on information systems research was addressed in chapter 2. We conclude this objective by summarising information systems research. All IS research is guided by the research methodology. The main research methodologies are qualitative, quantitative and participation action research. This study utilized qualitative research as the chosen methodology

for this study. Qualitative research methodology is chosen because it is relevant when to address the problem statement, research objectives and research questions. Research methodology outlines the research design, which is an overall plan for research.

The research design specifies the conceptual framework, research strategy, the research participants and the research tools and techniques. The main conceptual frameworks are positivistic, interpretive and critical social theory. Information systems research can use interpretive, positivistic or critical conceptual framework. The interpretive paradigm is conceptual framework chosen for this study because the study seeks to understand the reality as experienced by heterogeneous ISD teams during their interactions.

The main research strategies for positivistic research are surveys, experiments and quasi-experiments whereas research strategies for interpretive and critical social research are case studies, ethnography and ethnography. The strategy to be employed in this study is an interpretive multiple case study so as to increase validity of the results. A multiple case study will allow the researchers to question in depth the phenomenon so that they can answer the study questions. This will also allow the researchers to compare across companies to comprehend how they deal with intercultural communication.

The three main types of research participant selection are convenience participant selection, random participant selection and purposive participant selection. Purposive participant selection is used in this study since it is perfectly suited for this study as it allows the qualitative researcher to select a pre-defined sample because they meet a specified criterion. The study participants are intercultural ISD team members from diverse organizations in the Gauteng province of South Africa.

The main data gathering techniques in South Africa for qualitative, interpretive, case study research are ethnographic studies, in depth interviewing, participant observation and the use of documentary sources. This study used the interviews as a method of data gathering because it seeks to understand what the participants are feeling and thinking. A multicultural research team conducted the interviews in Gauteng. The interviews were recorded and transcribed using software.

There are many qualitative research techniques for data analysis and these includes transcendental realism, qualitative content analysis, ethnographic content analysis, semiotics, event structure analysis, ecological psychology, grounded theory, discourse analysis, social constructivist, rhetorical analysis and conversation analysis. Qualitative content analysis is a chosen method of data gathering since it will enabled us to analyse data in a format that is

reliable and valid. Atlas.ti 5.0 and Microsoft Excel software were used in data analysis. Klein & Myers's seven principles for evaluating were followed when interpreting the data in this study.

6.4.2 What is information systems development and information systems development team dynamics

The research question determined the ISD methodologies utilized by the team and the participants' understanding of those methodologies. It also aimed to determine how the team characteristics that the participants have experienced in ISD teams affect the communication process.

An understanding on information system development from the literature is that an IS team is a group of professionals responsible for developing an IS product and includes analysts, systems architect, hardware engineer, programmers, network specialist, quality assurance specialist, software engineer, technical writer and users.

Different types of ISD team approaches may include the democratic team approach, classical chief programmer approach, modern hierarchical programming teams, synchronize and stabilize teams, collaborative specialist team, extreme programming team, and open-source programming teams.

Information systems development team techniques include extreme programming, prototyping, joint application development (JAD), Scrum and virtual project teams.

The five different team dynamics includes stages of team development and recurring phases; team building issues; team composition and roles; types of decisions and sources of power; and giving productive team meetings. An ISD team has a range of issues including team structure and size, team role assignments and communication and coordination of team members.

The finding from case study interviews on ISDM is that all participating older people did not know what information system development methodologies are, younger people were able to name the methodology, but there were contrasting views within a team on which methodologies are used leading to the conclusion that methodologies are either used only by specific individuals or that they are not identified correctly.

6.4.3 What is culture?

The literature provides an understanding into culture by defining and breaking down the components of culture. Culture is a learned way of life passed on to group members characterized by symbols, values, norms, sanctions, material culture and rituals. An ISD brings together cultural diverse team members working together to achieve successful ISD project completion. Culture has different contexts namely: national culture, corporate culture, professional culture, gender, age, religious culture, regional culture and class culture. The views on culture can be essentialist, constructivist or neo-liberal. An ISD is developed in a cultural environment.

The questions on culture used in the case study aimed to provide an understanding on a person's socialization prior to joining the organization. These questions attempt to discover how cultural background affects employees when they do their job. These questions attempt to understand the extent to which the participants are aware of their own culture and that of their team members. The questions discover how participants understand culture and ethnocentrism and what their views on South African culture are. They attempt to discover how the religious cultural context affects team members' interactions with one another, thereby intercultural communication.

The findings from the case study provide more understanding on culture, especially from the South African ISD teams. A finding on team members' worldview is that even though most participants are from different cultural environments in terms of background, schooling, tertiary education and socialization and did not have intercultural training, two thirds of the participants did not experience culture shock and have similar frame of references and this leads to the conclusion that often people from different cultural background find the means of navigating their way into successful intercultural interaction.

A finding on the different views on culture, from the case study, is that culture is tacit in nature therefore participants have differing views on what is their culture and what is the culture of others. Burnham and Harris (2002:192) expressed this view when they maintained that culture and ethnicity are significant at all times but not essentially obvious.

Religious culture is one of the more important cultural contexts because some participants do not pledge any allegiance to their ethnic culture yet subscribes to a religious culture. The finding from the case study is that most participants are religious but discussion of religion is not common in the workplace leading to the conclusion that religion is important to individuals but it is an intimate issue and therefore discussed only with some colleagues.

6.4.4 What is communication?

Communication is one of the essential characteristics of teams. This aimed to understand how team members communicate with one another. This objective also determined the participant's preferred communication medium and the effects of non-verbal communication on the communication process between team members.

Communication can be defined as the activity of conveying and receiving messages that are altered by noise, happening within a context, that have an effect and afford a chance for feedback by one or more persons. The basic components of any communication system are source, context, recipient, message, channel, sending or encoding process, noise, receiving or decoding process, feedback and effect.

Context assists in the communication process by facilitating understanding between the source and the recipient. The context of communication can be physical, social and cultural. There are four basic levels of communication namely intrapersonal, dyadic, small group and mass communication. This study concentrated on small group communication between culturally diverse team members. These are the findings from the literature.

The finding from the interviews is that communication in general is open but culture and personality may affect the level of communication difficulty.

6.4.5 How is communication affected by different cultural contexts?

This objective aimed to determine how communication is affected by the different cultural levels, such as gender, age, class, job description, skills and technological experiences, of the communicator and the recipient.

There are different cultural contexts namely: national culture, corporate culture, professional culture (job position), gender, age, religious culture, regional culture and class culture and these different cultural contexts complicate the interpretation of the non-verbal aspects of communication. Individual carry different cultural contexts at the same time e.g. a religious young woman may be a system analyst. Intercultural communication is more difficult because the source and recipient have different contexts and share a few symbols.

The important areas that constitutes a knowledge of another culture includes verbal language, nonverbal language, beliefs, values, and attitude systems, social organization, worldviews and thought patterns.

The finding from the case study interviews is that there are advantages of heterogeneous and homogeneous teams, while role of importance of gender is balanced; conflicts are sometimes attributed to cultural differences.

6.4.6 How do cultural misunderstandings impact upon ISD team performance

The questions used in the case study aimed to understand how performance of a diverse ISD team is affected by intercultural communication between team members. They also aim to determine how culture influences their performance. The questions also aim to discover how individuals view their own performance towards the team performance. They also aim to determine how individuals deal with non-performing team members and cultural conflicts to ensure positive team performance.

This paragraph outlines the findings from literature. Overall organizational performance is influenced by team performance. The characteristics that make positive ISD team performance include meeting schedules and budgets, effective cooperation with all stakeholders, effective use of technical skills and producing quality information system. Other characteristics that positives influence ISD team performance are user involvement, strategic management support, unambiguous statement of requirements, correct planning, realistic expectations, smaller project milestones, competent staff, ownership, unambiguous vision and objectives and hardworking, focused staff as the ten critical success factors of ISD projects.

The finding from the case study interviews is that people have a good understanding of team aspects, such as roles, performance and conflict resolution. There are different views on the relationship between personality and culture. When people give detailed accounts of experiences some refer to negative experiences linked to different cultures.

6.4.7 What are the steps taken to eliminate miscommunication due to cultural issues in organizations?

This research question aimed to discover how cultural issues influence communication of a multicultural team and what steps are taken by the organization and individuals to address misunderstandings due to cultural issues.

From the literature the findings are that the Blake and Mouton's five modes for handling conflicts as confrontation, compromise, smoothing, forcing and withdrawal are commonly used to resolve conflicts. An ISD team has a propensity for conflicts due to the nature of the work and sharing of resources when you add diverse cultures the propensity for conflicts increases. Team members from culturally diverse backgrounds assign different meaning to verbal and non-verbal communication thereby increasing the chances of miscommunication.

The findings from the interpretive case study are that most people are positive about multicultural teams and find it easy to name benefits of such teams; Most people are focused on individual performance and are focused on individual characteristics rather than on culture when answering general questions; Half of the people interviewed experienced some cases of conflict that can be attributed to cultural difficulties; and different managers and individuals use different conflict resolution mechanisms when dealing with cultural conflict.

6.5. Recommendations and future research

This section provides the recommendations for this study and also makes recommendations for future research.

Recommendation 1

Many participants mentioned respects in many different contexts during the interviews. The challenge is what defines respectful behaviour. A recommendation is made that future research must define what respectful conduct in other cultures is. According to Lowe (1995:83) the important knowledge areas of another culture are belief, value, and attitude systems, social organization, worldview, thought patterns, verbal language and nonverbal language.

Recommendation 2

Some participants have mentioned that it is easier to work with people you know better or people you have worked with for a long while. Intercultural team training and team building training might be beneficial to employees to assist with intercultural interaction and initial

adjustment to cultural differences. The recommendation is therefore that organizations should provide intercultural training to facilitate easier working relationships among team participants. Organisations can implement diversity training to facilitate effective team work. According to research by Cox, Lobel and McLeod (1991), team members waste time negotiating group process.

Recommendation 3

The participants kept mentioning that team problems or dynamics were mostly influenced by personality. A recommendation is made that a study be conducted to shed light into the relationship between the contributions of personality type and culture to a person's make-up or being. This study did not explicitly explore the personality types of employees at the beginning of the interview. The questions that were asked in this study about personality touched a whole new topic and brought to the surface the similarity between culture and personality according to participants.

Recommendation 4

A clearly defined organizational culture might counter other cultural contexts. According to Iles and Hayers, (1997:103) a professional culture of mutual beliefs may promote crucial team integration (Iles & Hayers, 1997:103).

6.6 Chapter summary

The aim of this study was to gain an understanding on the influence of the intercultural communication on the performance of an information systems development (ISD) team. This study has tackled this aim by addressing the following objectives (1.) to understand information systems research and to justify the selection of the chosen research methodology; (2.) to understand information systems development and ISD teams; (3.) to understand culture and (4.) communication; (5.) to understand what effects communication has between different cultures; (6.) to discover how cultural misunderstandings impact upon ISD team performance and (7.) to discover the steps taken to eliminate miscommunication due to cultural issues in organizations.

This study has been a wonderful and difficult experience. The research problems and objectives were clearly outlined at the beginning of the research. The methodology used has been explained very well in chapter 2. It was necessary to have a plan that describes the research process very well and it helped to guide the research process. The research process for a novice is difficult but it is still a great opportunity to learn a new way of doing things.

Chapter 3 provided an understanding on information systems development team and team dynamics. Information system development is a cultural process as it has a way doing things and developed by culturally diverse professionals for culturally diverse users.

Chapter 4 provided an understanding on culture, communication and intercultural communication. Intercultural communication stems from culture and communication. Intercultural communication can be difficult because the different verbal and non-verbal cues allow for misinterpretation of the communication. This chapter also brought the whole research topic together by integrating culture, communication, ISD and team dynamics.

The interpretive case study is described in chapter 5. The case study was conducted in three organizations, in Gauteng province of South Africa, that have a sizable information systems development teams. The qualitative interpretive case studies took a while to be organized but in the end were successful. The data was gathered using interviews and was analysed using atlas.ti and the content analysis method. The process of analysis took longer than anticipated; The method of analysis was refined as with each iteration of the research process which caused analysis to be repeated many times and the volume was overwhelming.

The research has found that intercultural communication is generally open and South African ISD team members are positive about working in multicultural teams. The findings are presented in chapter 5 and chapter 6. The findings show that cultural conflicts arise and also shown the relationship between culture and personality as determinants of culture.

Chapter 6 presents the conclusions and recommendations. The conclusions describe why the study was conducted and what has been discovered from this study. The recommendations suggest ways in which intercultural communication can be improved in an organization.

APPENDIX A

Dear sir/madam

Re: Application to conduct research in your organization.

I hereby request to conduct research in your organization by means of interview. The research aims to discover how intercultural communication affects information systems team performance in a South African context and will be conducted in one day.

This research may benefit your organization, as the results will add the current knowledge in team building issues and advice on how to handle intercultural communication. Your organization will be able to view communication climate that currently exists. The research will also reveal whether the current communication climates in South African organizations take into consideration the cultural differences of ISD team members and how organizations deal with these. The results may assist in how to approach team development and conflict resolution in diverse ISD teams.

I would like to interview 5 participants from diverse cultural backgrounds (ethnicity, gender, religion, age, etc) for approximately 45 minutes each. These participants should have participated in ISD in a multicultural team context. The research aims to answer these major questions:

- What are the different views on culture?
- How do team members perceive their culture and that of others?
- What influences communication between different cultures?
- How do cultural misunderstandings impact upon ISD team performance?
- What are the steps taken to eliminate miscommunication due to cultural issues?

The research will be conducted by a multicultural team of interviewers so as to be able to interpret cultural specific non-verbal communication accurately.

Yours faithfully,

.....

Nhlapo Moleboge Emma (Mrs.)

APPENDIX B

Interview questions for ISD team members

This section divides the questions into 7 sections for different questions on personal background, culture, religion, communication, ISD, ISD team performance and team dynamics.

1 Questions on personal background

1. Where did you grow up?
2. To what extent do you interact with people from other cultures?
 - 2.1. What type of school did you attend?
 - 2.2. Do you have friends from other cultures?
3. Where did you study for tertiary education?
4. Does your cultural background influence the way you do your job?
5. Do you have the same frame of reference as your colleagues – do you understand their example e.g. when they explain something?
6. Have you been exposed to other people's culture prior to joining the organization? If yes, how?
7. What are their experiences in terms of cultural differences when you joined the organization?
8. If no, would you say you were interculturally prepared when you joined the organization?
9. What are your experiences on different cultures after being in the organization for a while?

2 Questions on culture

10. What do you understand by the concept of culture
11. What does it mean to be ethnocentric to others? How do you experience this?
12. What aspects of your culture would you like others to respect?
13. Which aspects of other cultures do you find irritating?
14. Which aspects of other cultures do you find impressive?
15. How often have you been in multicultural teams?
 - 15.1. How were your experiences in homogeneous and heterogeneous teams?
16. Do you think men and women can contribute equally to team?

17. Is there a specific organizational culture that exists to counter other contexts of culture (e.g. national, ethnic cultures)?
18. When you found yourself in disagreements arising from cultural differences, how did they deal with the situation?
 - 18.1. How did this situation affect the whole team?
 - 18.2. How did the team leader and team members deal with the situation?
19. What aspects of your culture have surfaced in the workplace?
20. What aspects of your culture did you find useful in team performance?

2B Questions on religion

21. Are you religious?
22. Do you know religious orientation of team members?
 - 22.1. Do you react to it?
23. Do your religious beliefs affect the way you do your job?
24. Do your religious beliefs affect the way relate to your teammates?

3. Questions on communication

25. Do you find it difficult to communicate with colleagues?
 - 25.1. Does their culture influence this?
26. Do you find it difficult to communicate with bosses?
27. Do you use the same language when communicating to your colleagues?
28. How do you feel when others use a different language in your presence?
29. Do you use non-verbal communication?
30. Do you experience colleagues using non-verbal communication?
31. How do you feel when other people use non-verbal communication?
32. Do you prefer e-mail or direct communication?
33. How easy is it for you to communicate with individuals?
34. How easy is it for you to communicate with individuals from the same culture?
35. How easy is it for you to communicate with individuals from a different culture?
36. How easy is it for you to communicate with groups?
37. Do you think/experience that body language is connected to culture?
38. Is it easier to communicate with men or women?
39. What makes it easier or more difficult to talk to colleagues?
40. How do you experience communication with team members who have different skill-sets?

41. How do you experience communication with team members who have different technological experiences?
42. Does your age influence the way you communicate with team members?

4. Questions on ISD

43. What types of ISD team development techniques are you familiar with?
44. Do you use an ISD methodology when developing information systems?
 - 44.1. What type of ISDM do you use?
45. How familiar were you with the tools and techniques used in the ISDM followed?
46. Do you think ISDM improves the ISD process?
47. How does ISDM improve the ISD process?

5. Questions on ISD team performance

48. What are the advantages of a multicultural ISD team when compared to a homogeneous team?
49. What are the disadvantages of a multicultural ISD team when compared to a homogeneous team?
50. What performance measures are used to measure ISD team performance?
51. Do you think that a multicultural team should have less strict performance measures than a homogeneous team?
52. How important is your individual performance when working in a team?
53. How does your culture influence your individual performance in the team?
54. How does communication affect performance of a multicultural team?
55. How do you feel when team member with the same cultural background as you is not performing well?
 - 55.1. What do you do about it?
56. How do you feel when team member with a different cultural background as you is not performing well?
 - 56.1. What do you do about it?
57. Should every team member be treated the same in terms of performance appraisal?
58. Is the culture of your project leader important as yours?
 - 58.1. Would you rather work with somebody with the same culture as you?
59. Have you experienced conflicts that you can link to cultural differences?
 - 59.1. Tell us about it?

- 59.2. How did you address/ solve the problem?
60. What can be done to improve the performance of an ISD team?

6. Questions on ISD team dynamics

61. Do you spend time with team members outside the project?
62. What team characteristics do you think are useful for team success?
63. What team structure is usually used in ISD teams that you have participated in?
64. How did you experience communication in every team structure?
65. Have you experienced subgroups in an ISD team? Can you tell us about it?
66. Are subgroups linked to cultural background?
67. What influences communication between subgroups?
68. What in your opinion forms the basis of subgroups in ISD teams?
69. What roles have you played in ISD teams that you have participated on?
70. Are team members allocated roles based on the culture of ISD participants?
71. Have you experienced team norms that clash with your own culture?
- 71.1. How did you handle it?
72. What team size do you think is reasonable to allow good team communication?
73. When forming teams how should team composition deal with team members from different cultures?
74. What team building exercises have you been involved in?
75. Were the team building exercises culturally acceptable / offensive to you?
- 75.1. How did you react to that?
76. What would you say is your personality type?
77. How does your personality influence your culture?
78. How does your culture influence your personality?
79. How does your personality type influence how you communicate with team members from a different culture as yours?
80. How does your personality type influence how you communicate with team members from a similar culture as yours?
81. What steps were taken by the organization to ensure cohesiveness in teams?
82. How does the team resolve disagreements?
83. How do you resolve conflict in ISD teams?
84. Does culture play a role in setting realistic expectations?
85. What role does culture play in the ownership of ISD problem?

APPENDIX D

A list of abbreviations used in these tables for specific cultures is necessary before this section. These abbreviations are commonly used throughout the tables.

Abbreviation	Full name
AC	Afrikaans Culture
BC	Black Culture
CC	Coloured Culture
GC	German Culture
IC	Indian Culture
II	Indians from India
OC	Organizational Culture
SAC	South African Culture
VC	Venda Culture
WC	White Culture
ZC	Zulu Culture

D.1 What is the intercultural background of participants?

Table D - 1: Cultural background of participants

Questions	Categories, codes and count	
1. Where did you grow up?	Category 1-1: Rural social background	
	Code	Count
	Rural	1A, 1B, 1C
	Category 1-2: Semi-rural social background	
	Code	Count
	Semi-rural	1A
	Category 1-3: Urban social background	
	Code	Count
	Urban	3A, 4B, 4C
2. To what extent do you interact with people from other cultures?	Category 2-1: Socializes across cultures	
	Code	Count
	<ul style="list-style-type: none"> • Intercultural friends • Intercultural work • Intercultural socialization • Intercultural relationship • Multicultural upbringing 	3A, 2B, 3C 2B, 3C 2A, 1B 1A, 1C 1B
	Category 2-2: Limited socialization	
	Code	Count
	<ul style="list-style-type: none"> • Limited socialization with other cultures. 	1C

Questions	Categories, codes and count		
2.1. What type of school did you attend?	Category 2.1-1: Schooling social setting		
	Code	Count	
	<ul style="list-style-type: none"> • Homogeneous schooling • Intercultural schooling • Homogeneous schooling initially 	2A, 2B, 3C 3A, 2B, 3C 1C	
2.2. Do you have friends from other cultures?	Category 2.2-1: White participants' friends		
	Code	Count	
	<ul style="list-style-type: none"> • Indian friends • Black friends • International friends • Coloured friends 	1A, 1B 1A, 1C 1A, 1B 1C	
	Category 2.2-2: Black participants' friends		
	Code	Count	
	<ul style="list-style-type: none"> • White friends • Coloured friends • Indian friends • Other African friends • Intercultural relationship 	2A 1A, 1B 1C 1B 1A	
	Category 2.2-3: Coloured participants' friends		
	Code	Count	
	<ul style="list-style-type: none"> • Intercultural friends 	1A, 1C	
	Category 2.2-4: Indian participants' friends		
	Code	Count	
	<ul style="list-style-type: none"> • Black friends • African foreigners friends • Asian friends • Intercultural friends • Intercultural relationship 	1C 1B 1B 1A 1C	
	3. Where did you study for tertiary education?	Category 3-1: Multicultural education	
		Code	Count
<ul style="list-style-type: none"> • Multicultural education 		5A, 2B, 2C	
Category 3-2: Homogeneous education			
Code		Count	
<ul style="list-style-type: none"> • Homogeneous education 		3B, 1C	
Category 3-3: Correspondence education			
Code	Count		
<ul style="list-style-type: none"> • Correspondence education 	2C		
4. Does your cultural background influence the way you do your job?	Category 4-1: Cultural influence on work		
	Code	Count	
	<ul style="list-style-type: none"> • Culture influences way of working • Cultural influence in work is minimal • Thoughts and ideas brought to work • Cultural mentalities different in intercultural work • Culture demands doing your best 	4A, 4B, 1C 1A 1C 1B 1A	
	Category 4-2: Culture does not influence work		
	Code	Count	
	<ul style="list-style-type: none"> • Culture does not affect way of working • Personality influences way of working • Does not bring culture to work 	1B, 4C 1A, 1C 1C	
	5. Do you have the same frame of reference as your	Category 5-1: Similar frame of reference	
		Code	Count
<ul style="list-style-type: none"> • Same frame of reference 		4A, 5B, 4C	

Questions	Categories, codes and count	
colleagues – do you understand their example when they explain something?	<ul style="list-style-type: none"> • Technical frame of reference • Same musical frame of reference • No experience in frame of reference misunderstandings • Learns from colleagues • Team frame of reference has developed • Same sports frame of reference • The world is generalized 	1A, 2B, 1C 1A, 1C 1A, 1B 1A 1A 1C 1C
	Category 5-2: Different frame of reference	
	Code	Count
	<ul style="list-style-type: none"> • Different frame of reference sometimes • Understanding frame of reference situational • Different frame of reference initially • Frames of reference different across cultures • Asks questions to counter different frame of reference 	2A, 2B, 2C 1C 1B 1C 1C
	Category 6: Exposure to other cultures	
	Code	Count
<ul style="list-style-type: none"> • Multicultural school • Multicultural education • Intercultural friends • Intercultural work • Interracial relationships • Intercultural environment 	3A, 2B, 3C 5A, 2B, 1C 3A, 2B, 3C 2B, 3C 1A, 1C 1B, 1C	
6. Have you been exposed to other people's culture prior to joining the organization? If yes, how?	Category 7-1: Culture shock not experienced	
	Code	Count
	<ul style="list-style-type: none"> • No culture shock • Do not have intercultural problems • Understands people of other cultures • Always intercultural environment • Multicultural upbringing • Accepted different cultures readily 	3A, 2B, 2C 2A 1A 1B 1B 1C
	Category 7-2: Cultures not evident	
	Code	Count
	<ul style="list-style-type: none"> • Department size did not allow for cultural observation • All cultures work the same • Others culture not evident • Unaware of cultural classification • Cultural differences not obvious • Previously few African people • Work culture has changed • Work diversity has increased • Africans fairly experienced • Junior African people • Minority in previous department • Senior white people 	1A, 1C 1B 1A 1A 1A 1A 1A 1A 1A 1A 1A 1A 1A
	Category 7-3: Culture shock experienced	
	Code	Count
	<ul style="list-style-type: none"> • Intercultural work difficult initially • Team members friendly • Addressing people on first name basis was difficult 	1A, 2B, 2C 1B, 1C 1A
	7. What are their experiences in terms of cultural differences when you joined the organization?	Category 7-1: Culture shock not experienced
Code		Count
<ul style="list-style-type: none"> • No culture shock • Do not have intercultural problems • Understands people of other cultures • Always intercultural environment • Multicultural upbringing • Accepted different cultures readily 		3A, 2B, 2C 2A 1A 1B 1B 1C
Category 7-2: Cultures not evident		
Code		Count
<ul style="list-style-type: none"> • Department size did not allow for cultural observation • All cultures work the same • Others culture not evident • Unaware of cultural classification • Cultural differences not obvious • Previously few African people • Work culture has changed • Work diversity has increased • Africans fairly experienced • Junior African people • Minority in previous department • Senior white people 		1A, 1C 1B 1A 1A 1A 1A 1A 1A 1A 1A 1A 1A 1A
Category 7-3: Culture shock experienced		
Code		Count
<ul style="list-style-type: none"> • Intercultural work difficult initially • Team members friendly • Addressing people on first name basis was difficult 		1A, 2B, 2C 1B, 1C 1A

Questions	Categories, codes and count	
	initially <ul style="list-style-type: none"> • Culture shock experienced at tertiary • OC does not permit calling aunty or uncle • Acceptable OC is first name basis • Interracial relationship facilitated diversity understanding • Previous boss mentor • Not really exposed to cultural diversity • Differing religious standpoints clearly visible 	1A 1A 1A 1A 1A 1C 1C 1B
8. Did you undergo any intercultural training in this organization?	Category 8-1: No intercultural training	
	Code	Count
	<ul style="list-style-type: none"> • No intercultural training • Intercultural training through schooling • Expected intercultural workplace • South Africans expect diverse work environment • Worked in different countries • Different intercultural experiences in each country • Exposed to intercultural environment first day of work • Informed about diversity at induction • Expected to assess diversity self 	5A, 5B, 4C 1A, 2B, 1C 1B, 1C 1A 1B 1B 1C 1A 1A
	Category 8-2: Intercultural training	
	Code	Count
	<ul style="list-style-type: none"> • Intercultural training at previous workplace • Intercultural training is important • Intercultural training facilitates cultural understanding • Intercultural training facilitated openness to change • Intercultural training facilitated openness to ideas • Intercultural training promotes not judging people 	1C 1A 1A 1C 1C 1C
9. What are your experiences on different cultures after being in the organization for a while?	Category 9-1: Adjusted to intercultural minor differences	
	Code	Count
	<ul style="list-style-type: none"> • Adjusted to intercultural minor differences • Multiculturalism is interesting • Cultural differences difficult to pinpoint afterwards • Had to learn about different cultures • Had to learn to understand intercultural speech • Outgrew first-name basis culture shock • Differing religious standpoints clearly visible • Had to learn to understand intercultural accents • Commonality leads to cultural change • Cultural change easier 	4A, 3B, 3C 2A, 1B 1A, 1C 1B 1B 1A 1B 1B 1A 1A
	Category 9-2: Accepted cultures readily	
	Code	Count
	<ul style="list-style-type: none"> • Accepted different cultures readily • Cultural diversity is good 	1B, 1C 1B
	Category 9-3: Cultural differences not obvious	
	Code	Count
	<ul style="list-style-type: none"> • All team members treated equally • All cultures work the same • Cultural differences not obvious • Intercultural training did not change me 	1A, 1C 1B, 1C 1A 1C

D.2 What is culture?

D.2.1 Views on culture

Table D - 2: Views on culture

Questions	Categories, codes and count	
10. What do you understand by the concept of culture?	Category 10: Defines culture	
	Codes	Count
	• Culture is traditions	3A, 2B, 2C
	• Culture is value influence	4A, 1B, 1C
	• Culture is upbringing influence	3A, 1B, 1C
	• Culture is belief system	1A, 1B, 3C
	• Culture is background	3A, 2C
	• Culture is societal creation	2B, 2C
	• Culture is language-based	1A, 1B, 1C
	• Culture is environmental influence	2B, 1C
	• Culture is learned way	1B, 1C
	• Culture is way of working	1A, 1C
• Culture is way of life	1A, 1C	
• Culture is perception of life	1A, 1B	
• Culture is artefact-laden	2C	
11. What does it mean to be ethnocentric to others? How do you experience this?	Category 11-1: Define ethnocentric	
	Codes	Count
	• Respecting other people's ethnicity	1B
	Category 11-2: Ethnocentric unknown	
	Codes	Count
	• Ethnocentric unknown	4A, 4B, 1C
	Category 11-3: Question not asked	
	Codes	Count
	• Question not asked	1A, 4C
	Category 11-4: Ethnocentric experience	
	Codes	Count
	• Indian culture (IC) darker skin tone not preferred	1B, 1C
	• IC skin tone important	1B, 1C
• Experienced gender discrimination	2B	
• Father ethnocentric	1A	
• Bangladeshi prefers whites	1B	
• Guys did not listen to a young woman	1B	
• Zulu Culture (ZC) most cultural society	1C	
Category 11-5: Never experienced ethnocentrism		
Codes	Count	
• Never experienced ethnocentrism	1A, 1B, 1C	
12. What aspects of your culture would you like others to respect?	Category 12-1: Western culture	
	Code	Count
	• German culture (GC) technically intelligent	1B, 1C
	• GC perfectionism a marketing strategy	1B, 1C
	• Afrikaans Culture (AC) demands quality	1A
	• AC has a sense of being proud	1A
	• AC is perfectionist	1A
	• AC: Respect for personal space	1A
	1A	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • AC is relentless • AC views tardiness is disrespectful • GC hardworking • GC motivated • GC serious • GC pedantic • GC perfectionist • Respect other people • White culture (WC) individualistic • WC rejects living at home at specific age • WC liberal on children 	1A 1C 1C 1C 1C 1B 1B 1C 1C 1C
Category 12-2: African culture		
	Code	Count
	<ul style="list-style-type: none"> • Black Culture (BC) respect morals • BC respect in speech acts • Ignorance over cultural issues in others noted • BC greets people • Venda Culture(VC) teaches voicing opinions • VC teaches avoiding eye contact with elders • Respect my religion • ZC respectful • ZC language should be respected • BC clothes are best • BC food is best • Black cultures are alike with minor differences • BC respect elders • BC shares things 	1A 1A 1A 1A 1A 1A 1A 1C 1B 1B 1A 1A 1A 1A 1A 1C
Category 12-3: Indian culture		
	Code	Count
	<ul style="list-style-type: none"> • Respect vegetarianism • IC extended family-centred • Respect value system • IC cannot institutionalize family • IC family-centred • IC in SA has equal work at home across genders • IC in SA open to women's equality • IC addresses unrelated elders as auntie and uncle • IC respects elders • Respect my religion • IC not punctual • Patriarchy in IC borderline • IC does not enforce boldness in girls • IC teaches girls to be coy • IC teaches girls to be shy • IC patriarchal 	1A, 1B 1B, 1C 1B, 1C 1A 1B 1B 1B 1B 1B 1C 1C 1C 1C 1C 1C 1C 1C 1C
Category 12-4: Coloured culture		
	Code	Count
	<ul style="list-style-type: none"> • Coloured culture (CC) Accept people's viewpoints • CC understand their perspective • Respect my religion • CC accommodates other people 	1A, 1C 1A 1C 1C

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • CC listens to other people • CC listens to superiors • CC promotes respects for superiors • CC respects other people • CC teaches obedience to superiors • CC traits individualistic • CC gets up early • CC metaphors misunderstood 	1C 1C 1C 1C 1C 1C 1C 1C
13. Which aspects of other cultures do you find irritating?	Category 13-1: White participants' views	
	Code	Count
	<ul style="list-style-type: none"> • Other cultures disrespects punctuality • Embrace diversity • The English disrespect religion • Not all cultures respect personal space • Some cultures are loud • Other cultures disrespect personal space • Other cultures: absence is disrespectful • South African (SA) whites not proud of apartheid legacy • BC males do not take instruction from women • BC patriarchal • Time management different in African cultures • Bangladeshi culture sloppy • SA education systems partly regurgitates learning • India Indians Culture sloppy • Poor people earns very little • Socio-economic factors favours whites in SA • GC hierarchical • GC believes in dictatorship • SA culture sometimes difficult • Religion biggest barrier to intercultural interaction 	1A, 1C 1A 1A 1A 1A 1A 1A 1A 1C 1C 1C 1B 1B 1B 1B 1B 1B 1B 1B 1B 1B
	Category 13-2: Black participants' views	
	Code	Count
<ul style="list-style-type: none"> • Some cultures are loud • Other cultures eavesdrops • Other cultures participates in others' private conversation • Xhosas experienced as arrogant • Zulus experienced as arrogant • Zulus ignore you when speaking a different language • Zulus disrespects women • Behavioural change towards Xhosas and Zulus • BC do not open the door for women • WC disrespects the elderly • WC do the smirk smile • WC perceives lack of eye contact as shadiness • Sometimes whites are disrespectful • European Culture is argumentative • Others should learn Zulu properly • Speaking Zulu should be done properly 	1C 1C 1C 1A 1A 1A 1A 1A 1A 1A 1A 2A 1A 1B 1B 1B	

Questions	Categories, codes and count	
	Category 13-3: Indian participants' views	
	Code	Count
	• Afrikaners prefer to speak Afrikaans even in meetings	1A, 1C
	• Some cultures are loud	1A
	• Speech loudness can be irritating	1A
	• BC not punctual	1A
	• BC patriarchal	1C
	• Patriarchal cultures are irritating	1C
	• Patriarchy crosses over to the workplace	1C
	• Patriarchy is an older mindset	1C
	• BC is loud	1B
	Category 13-4: Coloured participants' views	
	Code	Count
	• Other cultures disrespects others	1C
• Other cultures disrespects through cultural imposition	1C	
• Imposition of religion is cultural disrespect	1C	
• BC is loud	1C	
• BC loud to avoid misconception	1C	
• BC is patriarchal	1A	
• BC males more important	1A	
• WC has an element of racism	1A	
• WC perceived as racist	1A	
• Racism in WC is subconscious	1A	
14. Which aspects of other cultures do you find impressive?	Category 14:1: White participants' views	
	Code	Count
	• Other cultures respect others' religion	1A
	• BC community-centred	1C
	• IC family-centred	1C
	• 29-year old Indian friend still lives with family	1C
	• BC respects elders	1C
	• Hopes tolerance and understanding increases in Germany	1B
	• Hopes tolerance increases in SA	1B
	• SA culture does not complain	1B
	Category 14-2: Black participants' views	
	Code	Count
	• IC obedient	1A
	• IC respectful	1A
• II obedient	1A	
• II respectful	1A	
• Indian teamwork excludes non-close team members	1C	
• Indians are reserved	1C	
• Indians teamwork require close relationships	1C	
• Swati culture respects superiors	1B	
• Swati culture respectful	1B	
• WC males open door for females	1A	
• Homogeneous culture does not mean homogeneous behaviour	1A	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • Upbringing determines behaviour 	1A
	<ul style="list-style-type: none"> • WC respect the way they treat women 	1A
	Category 14-3: Indian participants' views	
	Code	Count
	<ul style="list-style-type: none"> • AC was previously family-oriented 	1A
	<ul style="list-style-type: none"> • BC ate healthy food 	1A
	<ul style="list-style-type: none"> • BC culture menu results in beautiful teeth 	1A
	<ul style="list-style-type: none"> • Other cultures enforces boldness in girls 	1C
	<ul style="list-style-type: none"> • Chinese culture has celebrations 	1C
	<ul style="list-style-type: none"> • Chinese culture has festivals 	1C
	<ul style="list-style-type: none"> • French culture has festivals 	1C
	<ul style="list-style-type: none"> • French culture has celebrations 	1B
	<ul style="list-style-type: none"> • Other culture care-free 	1B
	<ul style="list-style-type: none"> • Other cultures respects family values 	1B
	<ul style="list-style-type: none"> • Africans are communal 	1B
	<ul style="list-style-type: none"> • Afrikaners are protective of each other 	1B
	<ul style="list-style-type: none"> • Indians care about immediate family 	1B
	<ul style="list-style-type: none"> • Other cultures work hard 	1B
	<ul style="list-style-type: none"> • Whites work smarter 	1B
	<ul style="list-style-type: none"> • BC respect elders 	1B
<ul style="list-style-type: none"> • IC respect elders 	1B	
Category 14-4: Coloured participants' views		
Code	Count	
<ul style="list-style-type: none"> • BC respect elders 	1A	
<ul style="list-style-type: none"> • Indians from India (II) culture is humility 	1A	
<ul style="list-style-type: none"> • II culture seeks harmony with the world 	1A	
<ul style="list-style-type: none"> • WC is driven 	1A	
<ul style="list-style-type: none"> • WC is improvement driven 	1A	
<ul style="list-style-type: none"> • WC is personal driven and promise driven 	1A	
<ul style="list-style-type: none"> • AC opens doors for women 	1C	
<ul style="list-style-type: none"> • AC walks in front of women 	1C	
<ul style="list-style-type: none"> • ZC men walk in front of women 	1C	
<ul style="list-style-type: none"> • ZC protects women 	1C	

D.2.2 Cultural context and team performance

Table D - 3: Cultural context and team performance

Questions	Categories, codes and count	
15. How often have you been in multicultural teams	Category 15-1: Previous homogeneous team experience	
	Code	Count
	• Previous homogeneous work experience	1A, 2B, 2C
	Category 15-2: Intercultural work experience only	
	Code	Count
15.1. How were your experiences in both homogeneous and heterogeneous teams?	Category 15.1-1: Homogeneous team experience	
	Code	Count
	• Homogeneous culture makes things easier	4A, 1B
	• Homogeneity facilitates understanding	1A, 1C
	• Homogeneity facilitates proper treatment of individuals	1A
	• Homogeneity facilitates tolerance	1A
	• Homogeneity results in calmer behaviour	1A
	• Same thinking not good for team	1C
	• Same culture promotes same viewpoints	1C
	• Homogeneous work environment fine	1B
	• Homogeneity has less surprises	1B
	• Homogeneous team implements easier	1B
	Category 15.1-2: Heterogeneous team experience	
	Code	Count
	• Multiculturalism a chance of learning	1A, 2B, 3C
	• Multiculturalism promotes problem solution	1B, 3C
	• Multiculturalism is interesting	2A, 1B
	• Multicultural team promotes different viewpoints	1B, 2C
	• Multicultural and homogeneous teams perform the same	1A, 1C
	• Cultural issues should not affect work	1B
• Heterogeneity group process takes longer	1B	
• Intercultural learning on religion	1A	
• Intercultural learning on rituals	1A	
• Intercultural learning on tradition	1A	
• Multiculturalism instils cultural understanding	1A	
• Multiculturalism breeds defensiveness	1A	
• Comfortable multicultural relations at previous company	1C	
16. Do you think men and women can contribute equally to team?	Category 16-1: Equal gender contribution	
	Code	Count
	• Contribution across genders is the same	4A, 5B, 5C
	• Equal contribution is individual-based	1A
	• Equal contribution depends on home responsibilities	1C
	• Equal contribution across genders influenced by culture	1B
	• Women are as creative as men	1B
	• Respect knowledge across genders	1A
	• Respect person's knowledge	1A
• Indian, Black and Coloured colleagues with	1C	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> working spouses share responsibilities • Men have same responsibilities as women • Gender approach to ISD different • Men are practical • Women are emotional • Some projects may not have any women because of cultural issues • Submissive women in patriarchal culture may not contribute equally • Priorities of people individualistic • Contributed equally to men • Dedicated more energy previously • Do not stereotype against women 	<ul style="list-style-type: none"> 1C 1B 1B 1B 1B 1B 1C 1C 1C 1C
	Category 16-2: Women contributes more	
	Code	Count
	<ul style="list-style-type: none"> • Women do more by balancing families • Women do more • Women also are able to work long hours • Fulltime job, manage home affairs, please husband • More expected from women • Child responsibility changed work contribution • Priorities have changed • Worked longer hours previously • Single women also work long hours • Experienced difficulty leading team cause of gender • Guys did not listen to a young woman • Women experience more obstacles • Men are more dominant • Fewer women in workplace 	<ul style="list-style-type: none"> 2B 1A, 1B 1B 1C 1B 1C 1C 1C 1A 1B 1B 1B 1B 1B
	Category 16-3: Men contributes more	
	Code	Count
	<ul style="list-style-type: none"> • Males can work long hours continuously • Men do more • Work towards same goal • Prefer working with opposite sex • Women have issues • Men were oblivious to women's responsibilities • Male team of programmers 	<ul style="list-style-type: none"> 1A, 1C 1A,1C 1C 1C 1C 1C 1C
17. Is there a specific organizational culture that counters all other cultures?	Category 17-1: Organizational culture (OC) counters personal culture	
	Code	Count
	<ul style="list-style-type: none"> • OC dynamic • OC overshadows personal culture • Adapt to work environment • OC is easier to spot • Organizational identity adopted by all cultural groupings • OC does not permit calling aunty or uncle • Acceptable OC is first name basis • OC hierarchical 	<ul style="list-style-type: none"> 2A, 1C 1C 1C 1C 1C 1A 1A 1B

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • OC respects experienced people • OC encourages sharing • OC fosters commitment • OC fosters focus • OC geared towards empowerment • OC not profit-oriented 	<p>1B 1B 1B 1B 1B 1B</p>
	Category 17-2: Organizational culture compliments personal culture	
	Code	Count
	<ul style="list-style-type: none"> • OC work-oriented • OC equal treatment for all • OC similar to personal culture • Core work hours 9h00 to 15h30 • Work hours 8h00 to 16h30 • Often works late • Punctuality essential for meetings 	<p>2A, 3C 3A 2A 1A 1A 1A 1A</p>
	Category 17-3: Organizational culture has no influence on personal culture	
	Code	Count
	<ul style="list-style-type: none"> • No organizational culture influence • OC is influenced by personal culture 	<p>1B 1B</p>
	Category 17-4: Question not asked or answered	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked • Question not answered 	<p>2B 1B</p>
18. When you found yourself in disagreements arising from cultural differences, how did you deal with the situation?	Category 18-1: Cultural conflicts occur	
	Code	Count
	<ul style="list-style-type: none"> • Experienced cultural conflict • Communication problem with India Indians(II) • Cultural conflict among 2 colleagues • European culture is argumentative • Had a disagreement with a black colleague • Cultural clothes may be offensive • Cultural food may cause conflicts • Accused of patronizing colleague • Behaviour in speech acts unacceptable to colleague 	<p>3A, 3B, 1C 3A 1B 1B 1C 1A 1A 1C 1C</p>
	Category 18-2: Conflicts not cultural	
	Code	Count
	<ul style="list-style-type: none"> • No cultural conflict • Conflicting team members multicultural and multiracial • Conflicts are work-based • Conflict personality-based • Conflict stress-related 	<p>2A, 3C, 2B 1A 1A 1C 1C</p>
	Category 18-3: Conflict resolution mechanisms	
	Code	Count
	<ul style="list-style-type: none"> • Conflict resolution through intervention • I do not voice unhappiness • Adjusted to intercultural minor differences • Conflict resolution: compromise 	<p>2B, 1C 2B, 1C 1A, 1B 1A, 1B 1C</p>

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • Conflict resolution was quick • Hear both sides of the story • voiced unhappiness • Il needs intermediary to talk to manager • SA culture communicates directly with manager 	1A 1A 1A 1A
19. What aspects of your culture have surfaced in the workplace?	Category 19-1: White culture	
	Code	Count
	<ul style="list-style-type: none"> • Culture influences way of working • AC is perfectionist • AC is relentless • Allowed freedom because foreigner • GC logical thinkers • GC perfectionist • GC quality oriented • People respects my opinion because I am a stranger • Assists colleagues • Does not prefer leadership 	1A 1A 1A 1B 1B 1B 1B 1B 1B 1B
	Category 19-2: Black culture	
	Code	Count
	<ul style="list-style-type: none"> • Cultural integrity is brought to work • Cultural respect brought to work • Culture influence work • Culture is inherent • Some cultural behaviour is offensive to others • Tswana culture teaches integrity • Tswana culture teaches respect • Culture contributes to making communication difficult 	1A 1A 1A 1A 1A 1A 1A 1A 1C
	Category 19-3: Indian culture	
	Code	Count
	<ul style="list-style-type: none"> • IC diligent • Respect value system • Il culture work long hours • SA culture works 8 hour • Indian cultural food brought to work • Delivering quality work • Do your best • Indians and Africans respect elders • Meet project deliverables • Respect • Morality 	1B 1A 1A 1A 1C 1B 1B 1B 1B 1B 1B
	Category 19-4: Coloured culture	
	Code	Count
	<ul style="list-style-type: none"> • Culture influences way of working • Cultural influence in work is minimal • Culture demands doing your best • CC accommodates other people • CC listens to other people • CC listens to superiors 	1A 1A 1A 1C 1C 1C
	20. What aspects of your culture did you find	Category 20-1: Performance-oriented aspects of White culture

Questions	Categories, codes and count	
useful in team performance?	Code	Count
	<ul style="list-style-type: none"> Cultural perfectionism aids team performance 	1A, 2B
	Category 20-2: Performance-oriented aspects of Black culture	
	Code	Count
	<ul style="list-style-type: none"> Values and respect are similar across cultures Respect others contribution Respect others' thoughts Respect value system 	1A 1A 1A 1A
	Category 20-3: Performance-oriented aspects of Indian culture	
	Code	Count
	<ul style="list-style-type: none"> Good working relationship IC respects others belief system IC respects others opinions Respect Similar personalities from diverse cultures employed IC Communication facilitates conflict resolution IC Communication facilitates understanding IC empathises IC practice reciprocity Respect others contribution 	1A, 1B 1B 1B 1B 1C 1A 1A 1A 1A 1A
	Category 20-4: Performance-oriented aspects of Coloured culture	
	Code	Count
	<ul style="list-style-type: none"> CC accommodates other people CC listens to other people CC listens to superiors Work approach similar across cultures Do not have home traditions Cultural perfectionism aids team performance CC promotes respects for superiors CC respects other people CC respects other people's opinions CC teaches obedience to superiors CC traits individualistic 	1C 1C 1C 1A 1A 1A 1C 1C 1C 1C 1C

D.2.3 What is religious culture?

Table D - 4: religious culture

Questions	Categories, codes and count	
21. Do you know religious orientation of team members?	Category 21: Team members' religious orientation	
	Code	Count
	<ul style="list-style-type: none"> Religious orientation of some members known Religious orientation of colleagues known No religious fanatics at the office Differing religious standpoints clearly visible East GC mainly atheists People in other countries more religious Never bother asking about religion 	3A, 2B, 5C 3B, 2C 1B, 1C 1B 1B 1B 1A
	Category 21-2: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> Question not asked 	2A
	21.1 Do you react to it?	Category 21.1-1: Reaction to religious orientation
Code		Count
<ul style="list-style-type: none"> Respect others' religious choices Assess level of religious intimacy Religious orientation matters Religion shared with individuals Keen to learn about religions 		2A, 1C 1A, 1B 1A 1B 1C
Category 21.1-2: No reaction to religious orientation		
Code		Count
<ul style="list-style-type: none"> Does not react to religious orientation Religion not discussed with other team members Respect privacy Many people do not like criticism of religion People picky about religious feelings Religion is very personal 		1A, 4B 1A, 1B, 2C 1A 1B 1B 1B
Category 21.1-3: Question not asked		
Code		Count
<ul style="list-style-type: none"> Question not asked 		1A, 4B
22. Do your religious beliefs affect the way you do your job?		Category 22-1: Influence of religion on work
	Code	Count
	<ul style="list-style-type: none"> Religion affects the way I do my job Religious culture part of who you are Religion teaches behaviour Religion defines individuals Religion teaches respect 	3A, 2B, 4C 2B, 1C 1A, 1B, 1C 2C 1B, 1C
	Category 22-2: No influence of religion on work	
	Code	Count
	<ul style="list-style-type: none"> Religion does not affect work 	2A, 3B, 1C
23. Do your religious beliefs affect the way relate to your teammates?	Category 23-1: Influence of religion on relationships	
	Code	Count
	<ul style="list-style-type: none"> Religion influences behaviour around team members 	4A, 1B, 3C
	Category 23-1: No influence of religion on relationships	
	Code	Count
<ul style="list-style-type: none"> Religion does not affect my relationships Attends functions that are contrary to religious 	1A, 4B, 2C 1A, 1C	

	beliefs <ul style="list-style-type: none">• Teetotaller• Other Christians drink alcohol	1A, 1C 1A
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D.3 How is communication in different cultural contexts?

Table D - 5: Communication and culture

Questions	Categories, codes and count	
24. Do you find it difficult to communicate with colleagues?	Category 24-1: Communication easy	
	Code	Count
	• Communicates easily with all colleagues	3A, 4B, 4C
	Category 24-2: Communication difficulty sometimes	
	Code	Count
• Communication difficult with colleagues sometimes	2A, 1B, 1C	
24.1. Does their culture influence this?	Category 24.1-1: Culture influences communication	
	Code	Count
	• Homogeneous language makes things easier	3A, 2B, 1C
	• Homogeneous culture makes things easier	4A, 1B
	• Homogeneity promotes more collaboration	1A
	• Prefers homogeneity	1A
	Category 24.1-2: Culture has no influence on communication	
	Code	Count
	• Team members get along	1A, 1B, 1C
	• All team members treated equally	1A
Category 24.1-3: Question not asked		
Code	Count	
• Question not asked	1A, 1B	
25. What makes it easier or more difficult to talk to colleagues?	Category 25-1: Easy to communicate with friendly individuals that displays openness	
	Code	Count
	• Friendly cues make communication easier	1A, 1C
	• Open people makes communication easy	1A, 1C
	• Easy communication depends on the individual	1B
	• Open people are more rational	1A
	• Openness to others ideas makes communication easy	1A
	• Openness to others viewpoints makes communication easy	1A
	• Smiling made communication easier	1C
	Category 25-2: Difficulty linked to individual's resistance to critique	
	Code	Count
	• Other people take exception to constructive criticism	1A
	• Remarks on work are construed as personal attacks	1A
	Category 25-3: Difficulty linked to different opinions on everyday non work issues	
	Code	Count
• Non - socialization of B&W is not language-driven	1A	
• Non - socialization of B&W is music-driven	1A	
• Non - socialization of B&W is not racism-driven	1A	
• Non - socialization of B&W is sport-driven	1A	
Category 25-4: Difficult communication linked to individual		

Questions	Categories, codes and count	
	personalities	
	Code	Count
	<ul style="list-style-type: none"> Reserved personality makes communication difficult 	1A, 1B, 1C
	<ul style="list-style-type: none"> Level of easiness communication difficulty individualistic 	1A,1C
	<ul style="list-style-type: none"> Reserved people are likely to misinterpret the situation 	1A
	<ul style="list-style-type: none"> Unfriendly cues make communication difficult 	1C
	<ul style="list-style-type: none"> Friendliness not connected to culture 	1C
	Category 25-5: Other reasons for communication difficulty	
	Code	Count
	<ul style="list-style-type: none"> Communication made difficult by language 	2B
	<ul style="list-style-type: none"> Negative setting makes communication difficult 	1A
	<ul style="list-style-type: none"> Wrong perceptions make communication difficult 	
	<ul style="list-style-type: none"> Inexperience makes communication difficult 	1A
	Category 25-6: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> Question not asked 	1A, 1B, 1C
26. Do you find it difficult to communicate with your superiors?	Category 26-1: Communication easy with superiors	
	Code	Count
	<ul style="list-style-type: none"> Communication with superiors easy 	1A, 4B, 2C
	<ul style="list-style-type: none"> Communication easy with same culture superior 	1A
	Category 26-2: Communication difficulty with superiors	
	Code	Count
	<ul style="list-style-type: none"> Communication with superiors difficult 	3A, 2C
	<ul style="list-style-type: none"> Communication with superiors of any culture difficult 	2A
	<ul style="list-style-type: none"> Communication difficult with different culture superior 	1A
	Category 26-3: Communication difficulty with superiors initially	
	Code	Count
	<ul style="list-style-type: none"> Communication with superiors difficult initially 	1C
	Category 26-4: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> Question not asked 	1A
	<ul style="list-style-type: none"> Question not answered 	1B
27. Do you use the same language when communicating to your colleagues?	Category 27-1: Same language in communication	
	Code	Count
	<ul style="list-style-type: none"> English business language 	4A, 5B,3C
	<ul style="list-style-type: none"> Homogeneous language makes communication easier 	3A, 2B, 1C
	<ul style="list-style-type: none"> English spoken to all at work 	1A, 1B, 1C
	Category 27-2: Different language with some colleagues	
	Code	Count
	<ul style="list-style-type: none"> Different language with individuals 	3A, 2B, 1C
	<ul style="list-style-type: none"> Afrikaans is spoken with individuals 	1A, 2C
	<ul style="list-style-type: none"> Ethnic language used with same ethnicity colleagues 	2A
	<ul style="list-style-type: none"> English used with other ethnicities 	1A
	<ul style="list-style-type: none"> Enjoys communication with a fellow Zulu 	1B
28. How do you feel when others use a	Category 28-1: Different language speaking acceptable	
	Code	Count

Questions	Categories, codes and count	
different language in your presence?	<ul style="list-style-type: none"> Not bothered by speaking of different language 	4A, 2B, 2C
	<ul style="list-style-type: none"> Sometimes participates in conversation of different languages 	1C
	<ul style="list-style-type: none"> Asks to be included in conversation 	1C
	<ul style="list-style-type: none"> Irritated by retorts that one should learn a language to participate in conversations 	1C
	<ul style="list-style-type: none"> Does not want to learn a different language at current age 	1C
	<ul style="list-style-type: none"> English words used in other languages 	1C
	<ul style="list-style-type: none"> No problem with private chats in meeting 	1A
	Category 28-2: Different languages in meeting unacceptable	
	Code	Count
	<ul style="list-style-type: none"> Negatively affected by speaking of different languages 	1A, 3B, 2C
<ul style="list-style-type: none"> Other languages in a meeting unacceptable 	3A, 2C	
<ul style="list-style-type: none"> Raises it if other language is spoken 	1C, 1B	
Category 28-3: Answer cannot be categorised		
Code	Count	
<ul style="list-style-type: none"> Answer cannot be categorised 	1C	
29. Do you use non-verbal communication?	Category 29-1: Non-verbal communication used	
	Code	Count
	<ul style="list-style-type: none"> Non-verbal communication used 	2A, 4B, 3C
	Category 29-2: Non-verbal communication not observed	
	Code	Count
	<ul style="list-style-type: none"> Non-verbal communication not observed 	1B, 2C
	Category 29-3: Question not asked	
	Code	Count
<ul style="list-style-type: none"> Question not asked 	3A	
30. Do you experience colleagues using non-verbal communication?	Category 30-1: Non-verbal communication observed	
	Code	Count
	<ul style="list-style-type: none"> Non-verbal communication observed 	5A, 4B, 2C
	Category 30-2: Non-verbal communication not observed	
	Code	Count
<ul style="list-style-type: none"> Non-verbal communication not observed 	1B, 3C	
31. Do you prefer e-mail or direct communication?	Category 31-1: Both email and direct communication	
	Code	Count
	<ul style="list-style-type: none"> Both email and direct communication preferred 	2A, 1B, 3C
	<ul style="list-style-type: none"> Preference situational 	2A, 2C
	<ul style="list-style-type: none"> Direct communication and email have equal importance 	1C
	<ul style="list-style-type: none"> Direct communication and email used simultaneously 	1C
	Category 31-2: Email Communication preferred	
	Code	Count
	<ul style="list-style-type: none"> Email preferred 	1B
	<ul style="list-style-type: none"> Email facilitates record-keeping 	2A, 2C
<ul style="list-style-type: none"> Email preferred for work 	1A, 2C	
<ul style="list-style-type: none"> Email deliver message 	1A, 2B	
<ul style="list-style-type: none"> Email communication preference not cultural 	1C	
<ul style="list-style-type: none"> Email communication preference personal 	1C	
<ul style="list-style-type: none"> Text messages also used 	1B	
<ul style="list-style-type: none"> Email easier as it limits direct communication 	1C	
<ul style="list-style-type: none"> Direct communication requires trust 	1A	

Questions	Categories, codes and count		
	<ul style="list-style-type: none"> Direct communication does not provide proof of communication Experiences problems with email Email message delivery not instant 	1A 1B 1B	
	Category 31-3: Direct communication preferred		
	Code	Count	
	<ul style="list-style-type: none"> Direct communication preferred Direct communication more personal Direct communication response immediate Email open to misinterpretation Direct communication facilitates understanding Experiences problems with email Email typing takes longer Email communication is impersonal 	2A, 3B, 2C 1A, 2B, 1C 2B, 1C 1A, 1C 1B, 1C 1B 1B 1C	
	Category 31-4: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> Question not asked 	1A	
	32. How easy is it for you to communicate with individuals?	Category 32-1: Communication easier with individuals	
		Code	Count
		<ul style="list-style-type: none"> Communication with individuals easier 	4A, 4B, 3C
Category 32-2: Communication difficult with individuals			
Code		Count	
<ul style="list-style-type: none"> Communication difficult with individuals Communication difficult with strangers Communication initiated by others in communication Initially reserved in strange setting 		1B, 2C 1C 1C 1C	
Category 32-3: Question not asked			
Code		Count	
<ul style="list-style-type: none"> Question not asked 	1A		
33. How easy is it for you to communicate with individuals from the same culture?	Category 33-1: Communication easier with individuals from the same culture		
	Code	Count	
	<ul style="list-style-type: none"> Communication with colleagues of same culture is easier Homogeneous language makes things easier Homogeneous culture makes things easier Homogeneity promotes more collaboration Culture contributes to making communication difficult 	3A, 3B, 3C 3A, 2B, 1C 4A, 1B 1C 1C	
	Category 33-2: Level of communication difficulty not culture dependent		
	Code	Count	
	<ul style="list-style-type: none"> Culture of individuals does not affect communication All communication is difficult Communication across cultures easy 	1A, 2B, 1C 1B, 1C 1C	
	Category 33-3: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> Question not asked 	1A	
	34. Is it easier to communicate with	Category 34-1: Communication easy with all genders	
Code		Count	

Questions	Categories, codes and count		
men or women?	<ul style="list-style-type: none"> • Communication with all genders easy • Gender differences clearly visible in Bangladesh • Gender differences clearly visible in Tanzania • Interaction across genders is cultural • SA environment communication across genders acceptable 	2A, 3B, 4C 1B 1B 1B 1B	
	Category 34-2: Communicate easier with same gender		
	Code	Count	
	<ul style="list-style-type: none"> • Communicates easily with homogeneous gender 	1A	
	Category 34-3: Communicate easier with opposite gender		
	Code	Count	
	<ul style="list-style-type: none"> • Interaction with opposite gender easier • Women have issues • Prefer working with opposite gender • Men egotistic in interaction • Men more approachable • Women have good listening skills • Different interests for men and women • Genders separate in social settings • Communication depends on education and professional level of individual • Breaks stereotypes • Felt subconscious about communication same gender superior • Happy to work on all woman team 	1A, 2B, 1C 1B, 1C 1B, 1C 1A 1A 1A 1C 1C 1C 1C 1C 1A 1A 1C	
	Category 34-4: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> • Question not asked 	1A	
	35. How easy is it for you to communicate with groups?	Category 35-1: Communication easy with groups	
		Code	Count
		<ul style="list-style-type: none"> • Communication with groups easy • Communication with groups gives different viewpoints 	3A, 1B, 2C 1A
Category 35-2: Communicate difficult with groups			
Code		Count	
<ul style="list-style-type: none"> • Communication with a group difficult • Communication with few people is easier 		1A, 3B, 2C 1C	
Category 35-3: Question not asked			
Code		Count	
<ul style="list-style-type: none"> • Question not asked 		1A, 1B, 1C	
36. Do you think/experience that body language is connected to culture?	Category 36-1: Body language is cultural		
	Code	Count	
	<ul style="list-style-type: none"> • Body language is cultural • Indians from India use different body language • Expression across cultures is different • Posture is cultural • Sitting is cultural 	5A, 5B, 3C 5A, 2B, 1C 2A, 2C 1A, 2B 2B	
	Category 36-2: Body language is not cultural		
	Code	Count	
	<ul style="list-style-type: none"> • Body language is not cultural 	1C	
	Category 36-3: Body language not observed		
	Code	Count	
	<ul style="list-style-type: none"> • Body language not observed 	1C	

Questions	Categories, codes and count	
37. How do you experience communication with team members who have different skill-sets?	Category 37-1: Communication easy with differently skilled colleagues	
	Code	Count
	<ul style="list-style-type: none"> • Communication with different skills easy • Same technical frame of reference • Different skillsets communication facilitates learning 	4A, 1B, 1C 1A, 1B 2A
	Category 37-2: Communicate difficult with differently skilled colleagues	
	Code	Count
	<ul style="list-style-type: none"> • Communication with different skills difficult • Skills respected • Communication influenced by skill-level • Highly skilled • Skills not necessarily learnt at university • Experts difficult to work with • New team member • Ask for illustrations • Ask lots of question to understand • Misled because of inexperience • Inexperience makes communication difficult • Pay attention • Acknowledge speech in communication across diverse skills • Assist different skills where necessary • Assist diverse skills with sources of information • Guide diverse skills • Researches information from communication across diverse skills • Effective systems for communities must be developed • Involve users in ISD 	1A, 4B, 2C 2B 1B 1B 1B 1B 1A 1A 1A 1A 1A 1A 1A 1B 1B 1B 1B 1B 1C 1C
	Category 37-3: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	2C
	38. How do you experience communication with team members who have different technological experiences?	Category 38-1: Communication easy with colleagues with different technological experience
Code		Count
<ul style="list-style-type: none"> • Communication with different technological experience easy 		1A, 1B, 2C
Category 38-2: Communicate difficult with colleagues with different technological experience		
Code		Count
<ul style="list-style-type: none"> • Communication with different technological experience difficult 		1A, 2B
Category 38-3: Question not asked		
Code	Count	
<ul style="list-style-type: none"> • Question not asked 	3A, 2B, 3C	
39. Does your age influence the way you communicate with team members?	Category 39-1: Age influences communication behaviour	
	Code	Count
	<ul style="list-style-type: none"> • Age influences communication behaviour • Experienced discrimination due to age • Not taken seriously because of youth 	3A, 1B, 3C 1A, 1B, 2C 1A, 1C

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • Communicates differently with elders • Communicates differently with peers • Communicates differently with youngsters • Respect elders • Youngest manager • Age affects my work negatively • Given irrelevant work because of youth • Not taken seriously because of youth • Clients prefer to communicate with older teammates • Influence of age on communication depends on client • Influence of age on communication is situational • Influence of age on communication priorities 	2A 2A 2A 1A 1A 1A 1A 1A 1A 1C 1C 1C 1C
	Category 39-2: Age does not influence communication behaviour	
	Code	Count
	<ul style="list-style-type: none"> • Age does not influence communication behaviour • Age difference not obvious in this organization • Same treatment for everyone 	2A, 3B, 2C 1C 1C
	Category 39-3: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	1B

D.4 What is the understanding on ISD?

Table D - 6: Information system development

Questions	Categories, codes and count	
40. Do you use an information system development methodology (ISDM) when developing information systems?	Category 40-1: ISDM used	
	Code	Count
	• ISDM used	1A, 3B, 4C
	Category 40-2: No ISDM usage	
	Code	Count
	• No ISDM usage	4A
	Category 40-3: ISDM unknown	
Code	Count	
• ISDM unknown	2B, 1C	
40.1. What type of ISDM do you use?	Category 40.1-1: ISDM types used	
	Code	Count
	• System development life cycle	2B, 1C
	• No OSAS usage	1A, 2B
	• Internal standards	3A
	• OOM not used	2C
	• Object-oriented methodology (OOM)	2B
	• OSAS	1A
	• Iterative methodology	1C
	• Prince 2	1C
• No Prince 2	1C	
• IS development criteria and techniques	1C	
• RAD	1A	
Category 40.1-2: ISDM unknown		
Code	Count	
• ISDM unknown	1A, 1B, 1C	
41. How familiar were you with the tools and techniques used in the ISDM followed?	Category 41-1: Familiar with ISDM tools and techniques	
	Code	Count
	• Familiar with ISDM	2B, 1C
	• ISDM Used for 2 and 1/2 years	1B
	• Learnt the job from colleagues	1C
	• On the job training	1C
	• Training on products	1C
	Category 41-2: Not familiar with ISDM tools and techniques	
	Code	Count
	• Not familiar with ISDM	1A, 1B, 1C
Category 41-3: Question not asked		
Code	Count	
• Question not asked	4A, 2B, 3C	
42. Do you think ISDM improves the ISD process? How does ISDM improve the ISD process?	Category 42-1: ISDM improves ISD process	
	Code	Count
	• ISDM improves ISD process	4A, 3B, 3C
	• Development tool ensures same development standard	2A
	• ISDM ensures quality products	1B
• ISDM facilitates early reaction to project deviations	1B	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • ISDM facilitates project monitoring • ISDM reduce chances of failure • ISDM provides schedule • ISDM eliminates ad hoc work • ISDM defines a way of doing things • ISDM minimize mistakes • ISDM brings success to big projects 	1B 1B, 1C 1C 1C 1A 1A 1A
	Category 42-2: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	1A, 2B, 2C

D.5 What is the effect of intercultural communication on ISD team performance?

Table D - 7: Intercultural communication in information systems development teams

Questions	Categories, codes and count	
43. What are the advantages of a multicultural ISD team when compared to a homogeneous team?	Category 43-1: Advantages of multicultural team	
	Code	Count
	• Multicultural team illicit different viewpoints	1A, 3B, 4C
	• Multiculturalism facilitates learning	2A, 2B, 2C
	• Multicultural interaction improves cultural awareness	2A, 2B, 1C
	• Multicultural team promotes problem solution	1B, 2C
	• Multiculturalism promotes fresh ideas	1B, 1C
	• Intercultural ISD team is advantageous: everyone contributes	1C
	• Diversity promotes listening	1B
	• Multicultural groups more accommodating	1A
	• Multiculturalism enhances creativity	1B
	• Community-based development requires multicultural team	1B
	• Interacts with clients	1B
	• Interacts with developers	1B
	• Certain cultures may prefer specific gender computer-voice	1B
• Team representative of most cultures	1B	
• Impossible to represent all cultures	1B	
Category 43-2: Multicultural and homogeneous culture teams are the same		
Code	Count	
• Culture does not influence work	1A, 1C	
• Multicultural and homogeneous teams implementation the same	2C	
• All cultures work the same	2C	
• Multicultural and homogeneous team members have same skill level	1C	
• Across cultures individuals thinks the same	1C	
• My cultural traits are also found in other cultural groups	1C	
• Homogeneous team is not advantageous over heterogeneous team	1A	
• Every culture has its own richness	1A	
• Multiculturalism does not affect way of working	1C	
Category 43-3: Disadvantages of homogeneity		
Code	Count	
• Homogeneity facilitates same viewpoint	1A, 1C	
• Homogeneity facilitates stereotypes	1A	
• homogeneity promotes same thinking patterns	1C	
• Never worked in homogeneous team	1C	
• Homogeneous team more difficult	1C	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> Homogeneous team members tries dominate others 	1C
44. What are the disadvantages of a multicultural ISD team when compared to a homogeneous team?	Category 44-1: Advantages of homogeneity	
	Code	Count
	<ul style="list-style-type: none"> Homogeneous language makes communication easier 	3A, 2B, 1C
	<ul style="list-style-type: none"> Homogeneous friendships thrive 	2A, 1C
	Category 44-2: Multicultural and homogeneous culture teams are the same	
	Code	Count
	<ul style="list-style-type: none"> Culture does not influence work 	1A, 1C
	<ul style="list-style-type: none"> Multicultural and homogeneous teams implementation the same 	2C
	<ul style="list-style-type: none"> All cultures work the same 	2C
	<ul style="list-style-type: none"> Across cultures individuals thinks the same 	1C
	<ul style="list-style-type: none"> My cultural traits are also found in other cultural groups 	1C
	<ul style="list-style-type: none"> Homogeneous team is not advantageous over heterogeneous team 	1A
	<ul style="list-style-type: none"> Every culture has its own richness 	1A
<ul style="list-style-type: none"> Multiculturalism does not affect way of working 	1C	
<ul style="list-style-type: none"> Multicultural and homogeneous team members have same skill level 	1C	
Category 44-3: Disadvantage of multicultural teams		
Code	Count	
<ul style="list-style-type: none"> Multicultural members suffer misunderstandings 	1A, 1B, 1C	
<ul style="list-style-type: none"> Religious culture can cause clashes 	1A, 1B	
<ul style="list-style-type: none"> Multicultural team experience difficulty in achieving consensus 	1A, 1C	
<ul style="list-style-type: none"> Disadvantage of multicultural teams is communication 	1A	
<ul style="list-style-type: none"> Multicultural team members clash 	1A	
<ul style="list-style-type: none"> Muslims may want to pray during meeting time 	1A	
<ul style="list-style-type: none"> Multicultural team argues a lot 	1A	
<ul style="list-style-type: none"> Multicultural team spends time trying to please everyone 	1A	
<ul style="list-style-type: none"> Multicultural team wastes time 	1A	
<ul style="list-style-type: none"> Other cultures solves problems sequentially 	1C	
<ul style="list-style-type: none"> Other cultures views problems solving holistically 	1C	
<ul style="list-style-type: none"> Different cultures attaches different importance to matters 	1C	
<ul style="list-style-type: none"> Intrateam interaction great 	1C	
<ul style="list-style-type: none"> Minor cultural differences in team 	1C	
<ul style="list-style-type: none"> Multicultural team experience different time management 	1C	
<ul style="list-style-type: none"> Multicultural teams experience mismatches 	1C	
<ul style="list-style-type: none"> Multicultural team disadvantaged by differing needs of participants 	1B	
Category 44-4: Question not answered		
Code	Count	
<ul style="list-style-type: none"> Question not answered 	1B, 2C	
45. What performance measures are used	Category 45-1: Team performance measures	
	Code	Count

Questions	Categories, codes and count	
to measure ISD team performance?	<ul style="list-style-type: none"> • Team performance measure: completed projects • Team performance measure: effort • Team performance measure: quality • Team performance measures: completed tasks • Team performance measures: delivery-oriented • Balanced scorecards used to measure performance • Team members rate each other • Team performance measure: time • Team performance measure: costs • Team performance measure: project success or failure • Team performance measurement unstructured • Team performance measure: response time 	<p>3A, 1B 1A, 1B, 2C 1A, 2B, 1C 2B, 2C 1B, 2C 3A 2A 1A, 1B 1A, 1B 1B, 1C 1C 1A</p>
Category 45-2: No team performance measures		
Code		Count
<ul style="list-style-type: none"> • Individual performance measured • Team performance not measured • No team recognition culture 		<p>2A, 1B, 1C 1A, 1B 1A</p>
Category 45-3: Question not asked		
Code		Count
<ul style="list-style-type: none"> • Question not asked 		1A, 1B, 1C
46. Do you think that a multicultural team should have less strict performance measures than a homogeneous team?	Category 46-1: Same performance measures for all teams	
Code		Count
<ul style="list-style-type: none"> • Same performance standards for multicultural team • Multicultural and homogeneous teams should have same performance measures • Same opportunities same treatment • All teams should have similar performance measures 		<p>4A, 2B, 4C 2C 1A 1A</p>
Category 46-2: Different performance measures for multicultural teams		
Code		Count
<ul style="list-style-type: none"> • People did not have the same exposure • Time affords equal opportunities to all • Disadvantaged team needs different treatment • Multicultural team needs more time • Multicultural team should be treated leniently • Multicultural team suffer language barriers • Multicultural team suffer misunderstandings • Every team member should be individually appraised for performance 		<p>1A 1A 1A 1A 1B 1B 1B 1B</p>
Category 46-3: Question not asked		
Code		Count
<ul style="list-style-type: none"> • Question not asked • Question not answered 		<p>1B, 1C 1B</p>
47. How important is your individual performance when working in a team?	Category 47-1: Importance of individual performance	
Code		Count
<ul style="list-style-type: none"> • Individual performance is important • Individual performance improves the team • Team brings richness to individual • Individual performance improves the team 		<p>5A, 4B, 4C 3A, 1B 2A 1C</p>

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> Team success depends on individual success Individual work enhances team skills Individual work improves team cohesion Gives the best in team 	1C 1B 1B 1B
	Category 47-2: Individual performance hampers	
	Code	Count
	<ul style="list-style-type: none"> Individual lateness can delay the entire project Individual non-performance can deter group performance Team work is not riding on your group member Incomplete individual tasks influence team work 	1A 1A 1C 1C
	Category 47-3: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> Question not asked 	1B, 1C
48. How does your culture influence your individual performance in the team?	Category 48-1: Culture does not influence individual performance	
	Code	Count
	<ul style="list-style-type: none"> Culture does not influence individual performance Non-performance has no cultural bearing Race unimportant in interaction with colleagues Non-performance is work-related 	3A, 1B, 4C 2A 2C 1A
	Category 48-2: Influence of culture on work performance	
	Code	Count
	<ul style="list-style-type: none"> Culture influence work performance Unsure of cultural influence on performance Culture improve teamwork Other people have other skills Values personal contribution Delivering quality work Cultural aspects can affect performance: such as taking leave 	2A, 3B 1B, 1C 1B 1B 1B 1B 1A
	Category 48-3: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> Question not asked 	1A, 1B, 1C
49. How does communication affect performance of a multicultural team?	Category 49-1: Effects of communication performance	
	Code	Count
	<ul style="list-style-type: none"> Communication minimizes misunderstandings Communication facilitates learning Communication important in any relationship Communication Language influence team performance negatively English 2nd language speakers can experience communication problem Multicultural team suffer language barriers Communication with team does not differ from communication with individuals 	1C 1C 1C 1C 1C 1B 1B
	Category 49-2: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> Question not asked 	5A, 3B, 2C
50. How do feel when team member with the same cultural background as you is	Category 50-1: Sympathetic to homogeneous culture colleagues	
	Code	Count
	<ul style="list-style-type: none"> Sympathetic to homogeneous culture non-performer 	1A, 1B, 1C

Questions	Categories, codes and count	
not performing well?	<ul style="list-style-type: none"> • Unhappy about non-performance • Has pride in cultural background • Disappointed by cultural team member non-performance 	1B, 1C 1C 1C
	Category 50-2: Culture does not matter in performance	
	Code	Count
	<ul style="list-style-type: none"> • Culture does not matter in non-performance • Homogeneous culture does not mean homogeneous behaviour • Treat all colleagues the same • Would not rally with fellow coloured • Non-performance is work-related • Non-performance depends on their personality • Only one in my culture 	2A, 3B, 3C 1A, 1B 1C 1C 1A 1B 1B
	Category 50-3: Discussed actions towards non-performer	
	Code	Count
	<ul style="list-style-type: none"> • Speak privately with non-performer • Find non-performance root cause • Does nothing about non-performers • Human resources and line manager dealt with the non-performer • Non-performance root cause was not found • Non-performer had no personal problems • Personal motivation is better for a non-performer • Individual team members should introspect • Project failure responsibility assumed by team • Assist non-performer 	2B, 1C 2A, 1B 1B, 1C 1A 1A 1A 1C 1C 1C 1B
	Category 50-4: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	2A, 1B, 1C
51. How do you feel when team member with a different cultural background as you is not performing well?	Category 51-1: Culture of non-performer is unimportant	
	Code	Count
	<ul style="list-style-type: none"> • Culture does not matter in non-performance • Homogeneous culture does not mean homogeneous behaviour • Treat all colleagues the same • Would not rally with fellow coloured • Non-performance is work-related • Non-performance depends on their personality • Only one in my culture • Race should not matter when reprimanding people 	3A, 3B, 3C 1A, 1B 1C 1C 1A 1B 1B 1A
	Category 51-2: Unsympathetic to heterogeneous non-performer	
	Code	Count
	<ul style="list-style-type: none"> • Unsympathetic to heterogeneous non-performer • Unhappy about non-performance 	1A, 1B 1B, 1C
	Category 51-3: Discussed actions towards non-performer	
	Code	Count
	<ul style="list-style-type: none"> • Find non-performance root cause • Does nothing about non-performers • Speak privately with non-performer • Human resources and line manager dealt with the non-performer 	2A, 2B 3B, 1C 2B, 1C 1A

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • Non-performance root cause was not found • Non-performer had no personal problems • Personal motivation is better for a non-performer • Individual team members should introspect • Project failure responsibility assumed by team • Assist non-performer • No finger-pointing towards non-performer • Management must deal with non-performance • Would alert management about non-performance in team project 	1A 1A 1C 1C 1C 1C 1B 1C 1C
	Category 51-4: Question not asked	
	Code	Count
	Question not asked	1C
52. Should every team member be treated the same in terms of performance appraisal?	Category 52-1: Same treatment for all	
	Code	Count
	<ul style="list-style-type: none"> • Team members should be treated equally during performance appraisal • All teams should have similar performance measures • All team members working towards the same goals • Treat all people the same • Time affords equal opportunities to all • Same opportunities same treatment • Each team member must fulfil their roles and tasks 	3A, 3B, 4C 1A, 1B 1C 1C 1A 1A 1C
	Category 52-2: Different treatment for individuals	
	Code	Count
	<ul style="list-style-type: none"> • Every team member should be individually appraised for performance • People did not have the same exposure • Disadvantaged team needs different treatment • Culture should be considered in performance appraisal 	1B 1A 1A 1A
	Category 52-3: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked • Question not answered 	1A, 1C 1B
	53. Is the culture of your project leader important as yours?	Category 53-1: Project leader culture important
Code		Count
<ul style="list-style-type: none"> • Project leader culture important 		1A, 2B, 2C
Category 53-2: Project leader culture unimportant		
Code		Count
<ul style="list-style-type: none"> • Project leader culture unimportant 		4A, 2B, 3C
Category 53-3: Question not answered		
Code	Count	
<ul style="list-style-type: none"> • Question not answered 	1B	
53.1. Would you rather work with somebody with the same culture as you?	Category 53.1-1: Homogeneous leader preferred	
	Code	Count
	<ul style="list-style-type: none"> • Homogeneous leader preferred • Project leader's values important • Importance of project leader culture situational 	1A, 1B, 1C 1A 1B
	Category 53.1-2: Heterogeneous leader preferred	

Questions	Categories, codes and count	
	Code	Count
	<ul style="list-style-type: none"> • Never had project manager of own culture • Diverse leader preferred • Experience changes perception • First non-white superior • Previous superior Indian man 	1A, 1B, 1C 1B, 1C 1C 1C 1C
	Category 53.1-3: Project leader culture unimportant	
	Code	Count
	<ul style="list-style-type: none"> • Race unimportant in interaction with colleagues • Easily associates with other cultures • Project leader's values important • Project leader of different culture not disappointing • Project leader of different culture treatment different • Can work for black or white team 	1A, 1C 1A 1A 1A 1A 1C
	Category 53.1-4: Question not asked	
	Code	
<ul style="list-style-type: none"> • Question not asked 	1B	
54. Have you experienced conflicts that you can link to cultural differences?	Category 54-1: Cultural conflict arise	
	Code	Count
	<ul style="list-style-type: none"> • Cultural conflict arise • Minor cultural differences • Not many cultural conflict • Conflict not cultural • Conflicting team members multicultural and multiracial 	1A, 3B, 4C 1B, 1C 1C 1A 1A
	Category 54-2: No cultural conflict	
	Code	Count
<ul style="list-style-type: none"> • No cultural conflict • Conflicts are work-based 	4A, 2B, 1C 1A	
54.1. Tell us about it?	Category 54.1-1: Cultural conflict experiences	
	Code	Count
	<ul style="list-style-type: none"> • Had a disagreement with a black colleague • Accused of patronizing colleague • Behaviour in speech acts unacceptable to colleague 	1C 1C 1C
	<ul style="list-style-type: none"> • Cultural clothes may be offensive 	1A
	<ul style="list-style-type: none"> • Cultural food may cause conflicts 	1A
	<ul style="list-style-type: none"> • I do not voice unhappiness 	1A
	<ul style="list-style-type: none"> • I need intermediary to talk to manager 	1A
	<ul style="list-style-type: none"> • Misunderstands I culture 	1A
	<ul style="list-style-type: none"> • SAC communicates directly with manager 	1A
	<ul style="list-style-type: none"> • Included in all-male teams 	1C
	<ul style="list-style-type: none"> • University policy to include non-white female 	1C
	<ul style="list-style-type: none"> • Assigned role of analyst 	1C
	<ul style="list-style-type: none"> • Contribution ignored in all-male group 	1C
	<ul style="list-style-type: none"> • Males did the programming 	1C
	<ul style="list-style-type: none"> • Males had final say 	1C
	<ul style="list-style-type: none"> • Sidelined in all-male group 	1C
	<ul style="list-style-type: none"> • Working on Sunday is not good for me 	1C
<ul style="list-style-type: none"> • People wearing overalls not allowed in canteen 	1C	
<ul style="list-style-type: none"> • Discrimination against blue collar workers 	1C	

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • Cultural conflict: discriminating against women in Tanzania 1B • Male students did not listen to woman teacher 1B • Male students respected male teacher 1B • Male colleague did nothing 1B • Students learnt something 1B • Allowed freedom because foreigner 1B • European culture is argumentative 1B • Male person was deaf interpreter 1B • Male person would not go with a female driver 1B • Introspected self to assess behaviour in speech acts 1C • Was highly defensive 1C • Conflict resolution through intervention 1C • Conflict resolution was quick 1C • Cultural conflict resolved by following own culture 1A • Cultural conflicts resolved through alternative solution 1A • Cancelled meeting 1B • He was warned 1B • Male driver allocated next time 1B • Cultural conflict ignored often 1A • Expresses opinion in conflict 1A 	
	Category 54.1-2: Question not asked	
	Code	Count
	• Question not asked	2A, 3B, 1C
55. What can be done to improve the performance of an ISD team?	Category 55-1: Ways of improving ISD team performance	
	Code	Count
	<ul style="list-style-type: none"> • Improving team performance: mutual understanding and tolerance 1A, 1C • Team performance improved by team-building 2C • Improving team performance: openness 1A • Team performance improved by motivation 1C • Team performance improved by rewards 1C • Team performance improved by team development 1C • Team performance improved by increasing team members 1C • Personal relationships with teammates 1C • Tolerance is good for team success 1C • Tolerate different personalities 1C • Learn from previous experiences 1B • Team performance improved by analysis of previous projects 1B • Family-oriented IC improve teamwork 1B • Team success improved by communication 1B • Involve users in ISD 1B • Team performance improved by user involvement 1B • Team performance improved by recruiting right people 1B • Improving team performance: individual focus on 1A 	

Questions	Categories, codes and count	
	work	
	Category 55-2: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	3A, 2B, 1C

D.6 What is the effect of intercultural communication on ISD team dynamics?

Table D - 8: Intercultural communication and information system development team dynamics

Questions	Categories, codes and count	
56. Do you spend time with team members outside the project?	Category 56-1: Socialize with team members outside work	
	Code	Count
	<ul style="list-style-type: none"> Socializes with team outside work Homogeneous friendships thrive Socializes with whites only through work Socialize with team members to form close relationships Socialization with colleagues enlightening on current organization Goes bowling with team members Watches movies with team members Occasionally meets team member Team Friday lunch Unfriendly behaviour by same culture colleague is reciprocated Department socializes more than others. 	2A, 2B, 3C 2A, 1C 1A 1C 1A 1C 1C 1C 1C 1C 1C
	Category 56-2: Limited socialization with team members outside work	
	Code	Count
	<ul style="list-style-type: none"> Limited socialisation with team members Currently studying New mom 	2A, 2B, 1C 1B, 1C 1A
	Category 56-3: No socialization with team members outside work	
	Code	Count
	<ul style="list-style-type: none"> No socialization with team members outside work Socialization with team members organized at work Socialization with team members organized by team members Close friendships with few team members 	1A, 1C 1A, 3C 1C 1C
	57. What team characteristics do you think are useful for team success?	Category 57-1: Useful team characteristics
Code		Count
<ul style="list-style-type: none"> Team characteristics: motivation Team characteristics: common goals and common vision Team characteristics: self-management Team characteristics: mutual respect Team characteristics: role assignment to all participants Team success depends on individual success Team characteristics: devotion Team success is meeting team objectives Team characteristics: supporting one another 		1A, 2B 1A, 1C 2A 1A, 1C 1A 1C 1A 1A 1A

Questions	Categories, codes and count		
	<ul style="list-style-type: none"> • Team characteristics: togetherness • Personal relationships with teammates • Tolerance is good for team success • Tolerate different personalities • Team success improved by communication 	1C 1C 1C 1C 1B	
	Category 57-2: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> • Question not asked 	1A, 2B, 2C	
58. What team structure is usually used in ISD teams that you have participated in?	Category 58-1: Chief team structure		
	Code	Count	
	<ul style="list-style-type: none"> • Chief programmer team 	1A, 2B, 1C	
	Category 58-2: Flat team structure		
	Code	Count	
	<ul style="list-style-type: none"> • Flat 	1A, 3C	
	Category 58-3: Project team structure		
	Code	Count	
	<ul style="list-style-type: none"> • Project 	3A	
	Category 58-4: Hierarchical team structure		
	Code	Count	
	<ul style="list-style-type: none"> • Hierarchical 	1B, 2C	
	Category 58-5: Question not asked		
Code	Count		
<ul style="list-style-type: none"> • Question not asked 	2B		
59. Have you experienced subgroups in an ISD team? Can you tell us about it?	Category 59-1: Experienced subgroups in ISD teams		
	Code	Count	
	<ul style="list-style-type: none"> • Cliques within a team • Cliques formed by common language • Cliques formed by work assignment • Cliques formed by cultural identity • Teams for smoking • Subgroups based on skills • Cliques formed by common interests (count) • Cliques formed by common sympathies • Cliques based on race narrow-minded • Cliques not culturally-based 	2B, 1C 1A, 1B 1B, 1C 1B, 1C 1A 1C 1B 1A 1C 1A	
	Category 59-2: Experienced no subgroups in ISD team		
	Code	Count	
	<ul style="list-style-type: none"> • No subgroups in team 	2A	
	Category 59-3: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> • Question not asked 	2A, 1B, 2C	
	60. What roles have you played in ISD teams that you have participated on?	Category 60-1: Roles played in ISD teams	
		Code	Count
<ul style="list-style-type: none"> • Data developer • Business analyst • Code reviewer • Data modeller • Line Manager • Leaner developer • Programmer • Systems architect • Project leader 		3A, 4B, 2C 1B, 3C 1A 1A 1A 1A 1A 1C 1C 1B	

Questions	Categories, codes and count		
	<ul style="list-style-type: none"> User interface specialist 	1B	
61. Are team members allocated roles based on the culture of ISD participants?	Category 61-1: Culture does not affect role assignment		
	Code	Count	
	<ul style="list-style-type: none"> Culture does not affect role assignment Team role based on skills Team roles based on IS specification Team role based on knowledge No experience in culture influence role Team role based on team members enjoyment Team roles based on availability Work allocated by experience 	4A, 5B, 5C 1A, 4B, 2C 1A, 2B, 1C 2B, 1C 1B 1A 1A 1A	
	Category 61-2: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> Question not asked 	1A	
62. Have you experienced team norms that clash with your own culture?	Category 62-1: Experienced norms that clashes with culture		
	Code	Count	
	<ul style="list-style-type: none"> Team norms clash with my culture Teetotaller Working on weekends Attends functions that are contrary to religion Lying for self-preservation clashes with religion 	1A, 1B, 1C 1A, 2C 2C 1A 1C	
	Category 62-2: Did not experience norms that clashes with culture		
	Code	Count	
	<ul style="list-style-type: none"> Team norms do not clash with culture 	2B, 2C	
	Category 62-3: Question not asked		
	Code	Count	
<ul style="list-style-type: none"> Question not asked 	2A		
63. What team size do you think is reasonable to allow good team communication?	Category 63-1: Small team size and communication		
	Code	Count	
	<ul style="list-style-type: none"> 5 or less team members Larger teams permits non-performance Smaller team better to allow good communication 	1A, 2C 1A, 2B, 2C 1A, 1B, 1C	
	Category 63-2: Medium team size and communication		
	Code	Count	
	<ul style="list-style-type: none"> 9 and less team members Had problems with larger teams 	1A, 1B, 2C 1B	
	Category 63-3: Large team size and communication		
	Code	Count	
	<ul style="list-style-type: none"> 10 and above team members Bigger team is better Team size depends on work to be done Team size (good) depends on team factors Team size influenced by experience Good team can fit everyone in meeting room 	1A, 2B, 1C 1C 1C 1B 1B 1B	
	Category 63-4: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> Question not asked Indecisive 	2A 2B	
	64. What team building exercises have you	Category 64-1: Culturally acceptable team exercises	
Code		Count	

Questions	Categories, codes and count	
<p>been involved in? Were the team building exercises culturally acceptable / offensive to you? How did you react to that?</p>	<ul style="list-style-type: none"> • Team building activities not culturally offensive • Teetotaller • Team building activities included everyone • Participation in team building activities not compulsory • Braaing together • Bowling with team members • Nice and relaxed team building • Team building improves team performance • Headlining • Playing games • No pressure to drink alcohol • Team building improves relationships even beyond work • Team building improves cohesiveness • Formal dinner part 	<p>1A, 3C 1A, 2C 1B, 2C 3C 1A, 1C 2C 1A 1C 1C 1C 1B 1C 1C</p>
	Category 64-2: Team exercises culturally not acceptable	
	Code	Count
	• Team building culturally offensive	1B, 1C
	Category 64-3: No team building exercises	
	Code	Count
	• No team building exercises in the organization	1A, 1C
	Category 64-4: Question not asked	
	Code	Count
	• Question not asked	2A, 3B
65. What would you say is your personality type?	Category 65-1: Introvert	
	Code	Count
	• Introverted	1A, 1B, 2C
	Category 65-2: Extroverted	
	Code	Count
	• Extrovert	2A, 4B, 3C
	Category 65-3: Question not answered	
	Code	Count
	• Question not answered	2A
66. How does your personality influence your culture?	Category 66-1: Influence of personality on culture	
	Code	Count
	• Personality influences culture	2B, 2C
	• Personality influence work performance	2A
	• Personality types are general across cultures	1A, 1C
	• Personality does not impose ideas on others	1C
	• Personality does not influence culture	1C
	• Responsibility is personality based	1C
	• Personality builds character	1B
	Category 66-2: Question not asked	
	Code	Count
	• Question not asked	2A, 2B
	• Don't know	1B
67. How does your culture influence your personality?	Category 67-1: Influence of culture on personality	
	Code	Count
	• Personality is connected to culture	2C
	• Culture influences personality	1A, 1B
	• Personality influences religious culture	1B, 1C
	• Behaviour is cultural	2B

Questions	Categories, codes and count	
	<ul style="list-style-type: none"> • Culture influences work • Culture influences mind • Culture influences language • Culture is upbringing • Culture is inherent • Culture shapes people 	1A 1B 1B 1C 1C 1B
	Category 67-2: Culture has no influence on personality	
	Code	Count
	<ul style="list-style-type: none"> • Personality counts more than culture 	1C
	Category 67-3: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	1B, 1C
68. How does your personality type influence how you communicate with team members from a different culture as yours?	Category 68-1: Influence of personality type on communication with members of different culture	
	Code	Count
	<ul style="list-style-type: none"> • Conflict personality-based • Behaviour is cultural and personality based • Personality speaks freely and openly • Correct personality mix makes a good team • Personality influences communication with team members • Personality causes clashes • Relates easily to others • Works well with team • Ignored in communication acts because of introverted personality • Culture contributes to making communication difficult • Communication difficulty with a colleague is personality-based • African time concept not cultural • African time concept personality-based 	1A, 3C 3A 1A, 2C 1A, 1C 2B 2C 1B 1B 1A 1C 1C 1C 1C
	Category 68-2: Question not asked	
	Code	Count
	<ul style="list-style-type: none"> • Question not asked 	2B, 1C
69. How does your personality type influence how you communicate with team members from a similar culture as yours?	Category 69-1: Influence of personality type on communication with members of the similar culture	
	Code	Count
	<ul style="list-style-type: none"> • Personality influences communication with team members • Correct personality mix makes a good team • Conflicts are personality based • Personality influences the way you communicate to people • Team members from homogeneous cultures might clash • Personality speaks freely and openly 	2B 1A 1A 1C 1C 1C
	Category 69-2: Personality does not influence communication behaviour for or against a specific culture	
	Code	Count
	<ul style="list-style-type: none"> • Testing (personality) done before employment • Team members from homogeneous culture might clash 	2C 1C

Questions	Categories, codes and count		
	<ul style="list-style-type: none"> Personality counts more than culture 	1C	
	Category 69-3: Question not asked		
	Code	Count	
	Question not asked	4A, 3B, 1C	
70. What steps were taken by the organization to ensure cohesiveness in teams?	Category 70-1: Steps taken by the organization to ensure team cohesion		
	Code	Count	
	<ul style="list-style-type: none"> Team working well together Diversity training Team sharing faults Team sharing responsibility Team sharing work Cohesion across different skills expected Work meetings improves cohesion Team building improves cohesion Team cohesion efforts by management 	3A 1B, 1C 1A 1A 1A 1C 1B 1B 1B	
	Category 70-2: Question not asked		
	Code	Count	
	<ul style="list-style-type: none"> Question not asked 	1A, 3B, 3C	
	71. How does the team resolve disagreements / conflict in ISD teams?	Category 71-1: Conflict resolution	
		Code	Count
		<ul style="list-style-type: none"> Conflict resolution through intervention Conflict resolution through smoothing Conflict resolution through withdrawal Conflict resolution through confrontation Conflict resolution through compromise Conflict resolution individually 	2A, 4B, 3C 1A, 1B 1A, 1C 1A, 1B 1A, 1B 2A
		Category 71-2: No conflict resolution mechanisms	
Code		Count	
No conflict resolution mechanisms		1A	
Category 71-3: Question not asked			
Code		Count	
<ul style="list-style-type: none"> Question not asked 		2C	
72. Does culture play a role in setting realistic expectations?		Category 72-1: Culture plays a role in setting realistic expectations	
	Code	Count	
	<ul style="list-style-type: none"> Culture plays a role in setting realistic expectations 	3A, 4B, 2C	
	Category 72-2: Question not asked		
	<ul style="list-style-type: none"> Question not asked 	2A, 1B, 3C	
73. What role does culture play in the ownership of ISD problem?	Category 73-1: Culture influence problem ownership		
	Code	Count	
	<ul style="list-style-type: none"> Culture influence problem ownership Diverse cultures have different type of ownership Other cultures do not take responsibility for problems Cultures treated differently in the workplace Black people must deliver Others complain about overtime work Organizational culture influences ISD problem ownership Generalizations of culture is not good Cannot be passionate about projects not 	1A, 3B, 3C 1B, 1C 1A 1A 1A 1A 1B 1B	

Questions	Categories, codes and count	
	benefiting own people <ul style="list-style-type: none"> • Task completion is culture-based • Assuming responsibility for work is cultural-based • Culture linked to being responsible • Diverse cultures approaches problem-solving differently • Ownership in BC community-based • Ownership in WC individual-based • Responsibility is not cultural • Responsibility is personality-based 	1B 1C 1C 1C 1C 1C 1C 1C
Category 73-2: Culture does not influence problem ownership		
	Code	Count
	<ul style="list-style-type: none"> • Culture does not influence problem ownership • Personality influence problem ownership • Different personalities takes different stance to their jobs • Educational background influences problem ownership 	1B, 2C 1B, 1C 1C 1C
Category 73-3: Question not asked		
	Code	Count
	<ul style="list-style-type: none"> • Question not asked • Question not answered 	3A 1B

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