

**DEVELOPMENT OF AN
INTERPRETING SERVICES MODEL
AT THE DURBAN UNIVERSITY OF
TECHNOLOGY**

by

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Development of an
interpreting services model
at the Durban University
of Technology

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Technology: Language Practice in the Department of Media, Language and
Communication, Durban University of Technology.

I declare that this thesis is my own work and has not been submitted for any
other degree or examination at any other institution.

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ABSTRACT

This research deals with the development of a model of interpreting services for a newly merged multilingual University of Technology, the Durban University of Technology. The rationale for the study was the urgent need to give students whose mother tongue is not the medium of instruction (i.e. English) equity of access to higher-degree education. The research was carried out within a critical realist approach, which seeks to transform society by practical application of theory. Unlike previous studies in interpreting, this research focuses on the service provision aspect of interpreting. It falls within the field of educational interpreting, but goes beyond the classroom situation in considering other university interpreting needs, such as seminars and in-house conferences, graduation and other ceremonies, operational meetings and labour-related meetings. Franck's modelling process was used to formulate a theoretical model of the interpreting service delivery mechanism using data gathered during visitations to local and international universities. The theoretical model, or system of essential functions, was used to arrive at the applied aspect of the mechanism, termed an empirical model of interpreting service delivery. The model was then validated in terms of its application in various contexts at the Durban University of Technology. It is suggested that the theoretical and practical models developed have application not only for educational interpreting, but also in other interpreting contexts. The models are also considered to have relevance for service delivery in general, which is a critical issue at present in South Africa.

PREFACE

DECLARATION OF ORIGINALITY

I, Rosethal Loli Makhubu declare that this thesis is my own work and all the sources I have used or quoted have been indicated and acknowledged by means of complete references. The only form in which this work has previously been published is in the conference papers listed below.

PRIOR PAPERS AND PUBLICATIONS ARISING FROM THIS STUDY

Makhubu, R.L. 2005. The rights of interpreters versus the rights of officials of service providers in some of the public places in Durban. Proceedings of the *XVII 2005 FIT World Congress*. Tampere, Finland, August.

Makhubu, R.L. 2006. Interpreting qualifications in South Africa: an individualistic or integrated approach? Proceedings of the *2006 IATIS Conference*. Cape Town, 12-14 July.

Makhubu, R.L. 2007 Provision of interpreting services for the offering of Dental Assisting at DUT. Paper presented at the *LSSA/SAALA/SAALT Kongres 2007*. Noordwes-Universiteit, Potchefstroom Kampus, 4-6 July.

Makhubu, R.L. 2009. Providing an interpreting service during the FAD Conference 2009. Paper presented at the *FAD Conference 2009*. Ritson Campus, Durban University of Technology, 3-5 June.

Makhubu, R.L. 2010. Development of the interpreting services model. Paper presented at the *Critical Link 6 Conference*. Aston University, Birmingham, 26-30 July.

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My grandmother, Mrs L.S. Makhubu: “Wena nsika nesisekelo sami. Ngithi ume njalo Khoza, sengathi iNkosi ingandisa izinsuku zakho emhlabeni”

My daughters, Ntebogeng and Tebogo: “Nina bowele bami ngokungixhasa, nibekezele, nibe nami ngenkathi ngingumama omatasa nokufunda esikhundleni sokuba nani ngaso sonke isikhathi, I love you my Angie! Angies!”

Finally, to the God almighty Who always makes things possible, hence I count all my blessings.

GLOSSARY

Interpretation.¹ The clarification or simplification of a text within the same language.

Interpreting. The transference of an oral text from one language into another language.

Mechanism. A physical, social or mental process characterized by some particular configuration of its components, which normally leads to some specific outcome

Model. The term “model” refers to any representation which explains the nature, structure or working of a natural or social phenomenon.

Translation. The transference of a written text from one language into another language.

Text. A written or oral utterance.

¹ It must be noted that, while the terms “interpreting”, “interpretation” and “translation” are often used interchangeably, they are all different in meaning.

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INTRODUCTION

1.1 Introduction

This chapter first looks at the general aim and scope of the research, then at the background context in which this study takes place. The research approach is then outlined, followed by definitions of some key terms and concepts. It is suggested that new contributions to knowledge in the field include the adoption of a critical realist approach, the focus on the service provision aspect of interpreting, and the use of Franck's modelling process. The potential value of the research is then discussed, and the chapter concludes with an overview of the thesis.

1.2 General aim and scope of the research

The aim of this research is to provide a model of interpreting service which could inform provision of interpreting services in general, as well as have applicability in specific educational contexts, in particular, a multicultural South African University such as the Durban University of Technology (DUT). It is thought that the scope of the study is not limited to specific application of the model at DUT, as it was drawn up after consideration of generic factors in the processes observed at other universities. It is suggested that the theoretical model might have application not only in other interpreting domains or contexts but also in other fields of service delivery (e.g. Health Services, Housing).

1.3 Context of the research

DUT, as with most of the universities in South Africa, has a language policy (recently approved) which promotes multilingualism (i.e. is more in line with the country's constitution), yet sees this as being implemented in phases. The 2007/2008 Budget Speech (Thusi 2008) stated that there were three official languages in KwaZulu-Natal (i.e. isiZulu, English and Afrikaans) and encouraged equal use of all the three languages. Subsequent to this proclamation, a fourth language, isiXhosa, was added, which means that there are now four official languages in KwaZulu-Natal. Currently DUT uses two languages (i.e. English and isiZulu) in communicating with its community, internally and externally. However, official meetings for Council, Senate and Faculty Board are still conducted in English only. Moreover, the medium of instruction in lectures is mainly in English, while most of the learners are second or third language speakers of English. Other languages are used only when that language is taught as a subject, for example, isiZulu, Afrikaans or French. Other universities, such as University of North-West, University of Johannesburg and the University of Free State, have catered for languages other than the medium of instruction in their university official meetings (Council and Senate). In 2006 the University of Johannesburg conducted pilot studies in using more than one language and others are in the process of piloting the provision of interpreting services during lectures; the North-West University (Potchefstroom Campus) is currently providing extensive interpreting services during lectures. It is against this background that this research looks at developing a model for interpreting services at DUT.

The models of interpreting services which are currently found in the literature tend to be locally specific, which makes application at DUT problematic. To sum up, there exists a gap of an interpreting services model both for universities in South Africa and internationally. Moreover, previous research has tended to focus on the linguistic aspects of interpreting rather than viewing interpreting as a social practice. According to Pöchhacker (2004), interpreting should be viewed as "a situated activity and social practice", and this study makes the assumption that a model of interpreting services will also be socially based. The research therefore involves developing a model of interpreting services which can be adapted to fit various educational contexts, and which will be applied to the context of university interpreting requirements at DUT.

1.4 Research approach

This study, then, focuses on the effective delivery of an educational interpreting service at a multicultural university of technology (UoT) in KwaZulu-Natal in various interpreting settings: tuition, official university functions, conferences and labour interactions. In order to do so, it adopts a critical realist approach (Bhaskar 1978; 1979; 1989), and gives an account of a modelling process which contains both theoretical and applied aspects (Frank 2002). The theoretical model of interpreting service thus formulated means that the description of service delivery has the potential to be generalisable so as to be applied to other domains within educational institutions, as well as to interpreting in general. It is also suggested that the theoretical model of interpreting services might be applicable to service delivery in general: further research might show how it could be applied in South Africa, where service

delivery failure is provoking public demonstrations, resulting in not only refusal to vote but cases of civic violence.

1.5 Definitions of key terms and concepts

The following definitions will be elaborated on and refined further in the course of this thesis:

1.5.1 Interpreting

“Interpreting” is defined as the transference of an oral text from one language into another language. This must be distinguished from interpretation, which is taken to mean clarification or simplification of a text within the same language. While interpreting could be viewed as a type of translation (but in speech, not writing), it is the sense of immediacy (Pöchhacker 2005b) and, for that reason, the seldom-perfect attempt at the closest approximation of meaning at any given moment, which characterises interpreting.

1.5.2 Translation

“Translation” is defined as the transference of a written text from one language into another language.

1.5.3 Text

“Text” is defined as a written, oral or signed utterance.

1.5.4 Critical realism

“Critical realism” is a philosophy (Yeung 1997: 51) which is generally attributed to Roy Bhaskar (1978; 1979; 1989), but which has also had significant input from Margaret Archer (1998; 2002) and Rom Harré (1979; 1986). Modelling, in an attempt to understand the nature of things, is a typical critical realist process. However, according to Bhaskar, social science “always consists in a practical intervention in social life” (Bhaskar 1986: 169). Critical realism is therefore congruent with this researcher’s beliefs and values in attempting to improve communication, and potentially, the quality of life, for university staff and students, as well as the greater community, by a practical application of a model of interpreting service delivery. In terms of being used as a research orientation, critical realism is generally described as post-positivist, but should not be confused with critical theory (although it is claimed that it favours Marxism, see Baëhr 1990: 771).

1.5.5 Mechanism

A mechanism is defined as “a physical, social or mental process characterized by some particular configuration of its components, that normally leads to some specific outcome” (Pratt 2011: 208). It can refer to natural or social processes, the latter including social interventions such as service delivery. A social mechanism involves more than a description of a social process: it includes a formal or theoretical aspect which characterises the essential nature of that process (Bhaskar 1978: 88; Franck 2002: 96).

1.5.6 Model

The term “model” is used to refer to “any representation which explains the nature, structure or working of a natural or social phenomenon clearly” (Pratt 2007: iii). As will be discussed in more in the course of this thesis, it is the “system of relations” which the model represents which is important when it is used to represent social mechanisms. It must be emphasised, however, that there is very wide application of the term “model” in the literature, ranging from ad hoc descriptions to abstractions which are difficult to relate to the real-life social process.

1.5.7 Service delivery

The term “service delivery” refers to the provision of a social service.

1.6 New contributions to knowledge in the field

It is thought that this thesis makes several new contributions to knowledge in the field, translation and interpreting, in particular, to the area of educational interpreting, as follows:

1.6.1 Adoption of a critical realist approach

Adopting a critical realist approach to interpreting is innovative in terms of it not having been used as a research orientation in the area of interpreting until now. The critical realist philosophy offers an alternative to current linguistic or discourse approaches, as well as to previous works on modelling where different theories, for instance, about social, linguistic or cognitive functioning, have been applied.

1.6.2 Focus on the service provision aspect of interpreting

The focus in this study is not on the linguistic, cognitive or discourse aspects of the interpreting process but on the interpreting service provision aspect. It must be stressed that “service” is an integral aspect of interpreting, as it can be seen to be a service provided in order to fulfil another person or group’s communicative needs. Currently process models of interpreting have been formulated, and are used as the basis for classroom interpreting (Kalina 2007; Verhoef 2010c). However, the models of interpreting service *delivery* which have been explored so far have been found on the whole to be context specific with ad hoc elements. It must be stressed the term “model” tends to be applied to literal descriptions of a phenomenon with little regard as to whether systemic or even common elements of a social process have been identified, and is often used of case studies or exemplars. However, there are elements of other models, even those comprising checklists, which can be found to support the models developed in this study, as will be discussed in the literature review (Chapter 2). It is the contention of this study, however, that descriptions of the interpreting process are not able to be applied in different contexts unless they are informed by a systemic formal structure which is generalisable. Even the practical model developed here can be seen to be generalisable so as to be applicable in other contexts (i.e. of interpreting).

1.6.3 Use of Franck’s modelling process in the field of interpreting

Use of Franck’s (2002) modelling process in the field of interpreting is innovative in terms of its not being used before in the field of interpreting. Its

main advantages are that it not only offers a means of integrating theory with actual practice, but can lead to the development of generalisable principles which can be applied in other contexts or fields. This may suggest a way to deal with other aspects of the interpreting process which would result in models being practical as well as informed by theory. The concept of the “theoretical model” (Franck 2002) offers an innovative way of dealing with theoretical aspects of social mechanisms, as will be shown in the section on modelling (Chapter 3).

1.7 The value of the research

It is hoped that this study will contribute to improved communication at an English medium UoT where the majority of students are English Second Language (ESL) speakers. The potential value of this research is that, in making provision for the situation existing at DUT, the researcher has formulated a model of interpreting services which could transform universities in giving more access to students who are not mother tongue (MT) speakers of the language of instruction, as well as to foreign students. Franck’s (2002) modelling process offers insights at a theoretical as well as an applied level: this means that the model developed in the study has the potential to be generalisable not only within the same area (i.e. interpreting), but also in other areas or fields (i.e. translation, education, health, housing, *inter alia*).

1.8 Overview of the thesis

An overview of the thesis is given, showing the rationale for the model of an interpreting service, as well as mapping out the course of the actual modelling process.

Chapter 1: Introduction.

This chapter gives the general aim and scope of the research, background context, and research approach. It defines key terms and concepts, and identifies new contributions to knowledge in the field, as well as the potential value of the research.

Chapter 2: Literature review

Chapter 2 reviews key language issues relevant to the South African context, including the role of language in education and associated legislation. The process of transforming the higher-education system at DUT is then described. After a consideration of the nature of educational interpreting, interpreting is defined as part of a communicative interaction, and further key aspects of the interpreting process are discussed. The relationship between modelling and theory is explained, followed by an overview of modelling in the area of interpreting, with those relevant to this study being identified and discussed. It concludes with the specific research questions which were formulated on the basis of the aim and scope of the research, as well as a gap perceived to exist in previous and current studies and literature, namely a model of interpreting which will focus on the issue of service delivery implicit in the notion of interpreting.

Chapter 3: Research orientation and methodology

In Chapter 3 the research orientation, critical realism, is described, and reasons are given to support its suitability for this study. Next, the nature of the social mechanism is explored, showing how an interpreting service can be viewed as a type of agent-driven mechanism with interactive rather than causal determination. Franck's modelling process, which involves classical induction (a type of "reverse engineering"), is then described, as well as its application in this study.

Chapter 4: Development of the interpreting services model

Chapter 4 deals with the development of the interpreting services model. This chapter shows how, in an attempt to define the properties of the system, visits to various universities were carried out in order to observe interpreting services in action in different social contexts. This could be seen enable the researcher to arrive at the "system of essential functions" necessary for an interpreting service to take place. The "theoretical model" thus formulated enabled the identification of the social mechanism involved in providing an interpreting service. This in turn enabled the formulation of an empirical or applied model of providing interpreting services. Chapter 4 shows how two models were in fact produced, one describing the formal aspects of the mechanism of interpreting service delivery, the other showing the applied aspects.

Chapter 5: Validation of the models

In Chapter 5 the models are validated. The applied model is validated by showing how it not only reflects the provision of such services in the universities visited, but also matches real life provision of interpreting services in four domains when applied in a specific university context, DUT. The Theoretical model is validated by virtue of its match with the applied model. Reference is also made to elements in the literature and previous studies which support both formal and applied models.

Chapter 6: Conclusions and recommendations

Chapter 6 draws conclusions and critiques the study, as well as suggesting directions for further applications and research.

1.9 Conclusion

The aim of this research was expressed as providing a model of interpreting service to inform provision of interpreting services in general as well as having applicability in specific educational contexts. It was also suggested that the theoretical model might have application not only in other areas of interpreting but also in other fields, such as Health Services or Housing. The context of the research was next described, then the research approach, critical realism, using Frank's (2002) modelling process to arrive at insights into the nature of interpreting. Definitions of some key terms and concepts were given. It was then suggested that new contributions to knowledge in the field include the adoption of the critical realist approach, the focus on the service provision

aspect of interpreting, and the use of Franck's modelling process. The value of the research was identified as contributing to improved communication at an English medium UoT with a majority of ESL students, as well as potentially transforming universities in giving more access to students who are not MT speakers of the language used as medium of instruction. The fact that Franck's (2002) modelling process offers insights at a theoretical as well as a practical level also means that the modelling taking place in this study has the potential to be generalisable within other areas or fields of study. The chapter concluded with an overview of the thesis.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter 2 first looks at the issue of Language in Education in South Africa, and then the legislation governing it. The process of transforming the higher-education system at the Durban University of Technology (DUT) is described as moving towards multilingualism but requiring an interpreting service to give students access to higher education. After a consideration of the nature of educational interpreting and the possible types and modes of interpreting involved, interpreting is defined as part of a communicative interaction, and further key aspects of the interpreting process are discussed, emphasising the social nature of interpreting. Next, the relationship between modelling and theory is explicated. An overview is given of models of interpreting, and those relevant to this study are identified and discussed. The research objectives are defined in terms of formulating a model of interpreting service delivery which might be relevant not only to interpreting, but also to other sectors, to cater for both local and international service delivery needs.

2.2 Language in Education in South Africa

Universities are faced with the challenge of promoting previously marginalised languages in South Africa (see Alexander 2009: 124), at the same time offering equity of access to students in tertiary education. Most South African universities have multicultural and multilingual student bodies, with fairly

homogenous monolingual or bilingual staff. An added complication is that certain groups of language speakers predominate in certain regions, while in other areas there is more language diversity. For example, in Gauteng Province the universities have to cater for more diversified language groups (see Table 2.1, from Clausen's Table 2, Clausen 2011: 32, which contains student profiles derived from Le Roux 2007:2181 and Pienaar 2007:2005). Yet in KwaZulu-Natal universities have to cater for four predominant languages (i.e. English, Afrikaans, isiZulu and isiXhosa). Historically in South Africa English has been the medium of instruction at universities because of the colonial past, with Afrikaans added as the political landscape changed.

Table 2.1 Example of diversified multilingual student group in Gauteng (Table 2, in Clausen 2011: 32)

	Moedertaal	Getal studente	Persentasie	Geldige persentasie
	1 Afrikaans	7	7,3	7,4
	2 Engels	32	33,3	33,7
	3 isiXhosa	8	8,3	8,4
	4 isiZulu	17	17,7	17,9
	5 Chichewa	1	1,0	1,1
	6 Frans	1	1,0	1,1
	7 Kiswahili	1	1,0	1,1
	8 Sepedi	4	4,2	4,2
	9 SeSotho	8	8,3	8,4
	10 Setswana	11	11,5	11,6
	11 SiSwati	2	2,1	2,1
	12 Tshivenda	2	2,1	2,1
	13 Xitsonga	1	1,0	1,1
Totaal		95	99,0	100
Afwesig		1	1,0	
Totaal		96	100,0	

Moreover, as Alexander points out, ACALAN has recommended that the Language Plan of Action for Africa be amended to reflect the reality of English being the “language of globalisation” (Djité 2008, cited in Alexander 2009: 118). However, the South African government has to be progressive in promoting multilingualism, given that a democracy should cater for previously marginalised language groups. It is thus faced with the challenge of ensuring that universities cater for these groups.

Nevertheless, English remains the dominant language in most universities in South Africa, particularly with regard to the medium of instruction. This leaves universities with the dilemma of how to promote multilingualism and at the same time give all students equity of access to education. Multilingualism is inevitably a long-term goal, as it requires extra resources and infrastructural changes, as well as careful planning (Alexander 2009). However, the issue of equity of access to education where the medium of instruction is not one’s mother tongue needs urgent attention.

The options available are as follows:

- multilingualism
- dual medium
- parallel medium
- translation/interpreting

However, as Alexander points out, the “desirability, feasibility and effectiveness of a language strategy” need to be considered when selecting the suitability of any one (or combination of) options (2009: 119).

Multilingualism is an option, but, as already mentioned, is not currently a feasible one, as most university staff in South Africa are not multilingual. It is however, something which could be worked towards as a long term goal. Dual medium instruction would not work where there is a multiplicity of different languages, as it requires specialist staff who are bilingual, and has the disadvantage of possibly marginalising the less dominant language (Du Plessis 2010: 22). Parallel medium instruction is not feasible in South Africa owing to the need for additional resources and infrastructure, and most South African Universities have ageing infrastructure and are already under-resourced. Moreover, it can lead to a separation of cultures and perpetuate monolingualism (Du Plessis 2010: 19). The immediate solution to the pressing problem of equity of access to education, mentioned above, would seem to be to provide a translation and/or interpreting service. Interpreting, in particular, would enable students in multicultural groups to receive the same tuition at the same time without separation or being marginalised: it is in fact a solution which is “beneficial towards enhancing inclusivity and language stability on the campuses” (Mathey 2010: 185, reporting on Verhoef’s research, carried out at North-West University 2006: 95-98). An interpreting service could even provide the prelude to true multilingualism in providing access for staff and students to different languages and communication styles. It could do this by paving the way to bilingual mother tongue education, as suggested by Alexander, who sees this as operating in parallel with “managed multilingualism” (Djité 2008, cited in Alexander 2009:120).

There is still the issue of feasibility in providing a interpreting service at universities in terms of how it can be achieved and how resources can be provided. However, it is considered that this option can be achieved more easily, as there are numerous examples of it operating smoothly in international circles in commerce and world organisations such as UNESCO and the European Commission.

2.3 Legislation governing Language in Education in South Africa

Legislation has been set in place to redress inequalities in access to education in South Africa. The Pan South African Language Board Act 59 of 1995 was made to create conditions for the furtherance of multilingualism in the country (Republic of South Africa 1995). The act also provides a framework for this process. In the Constitution of the Republic of South Africa, Chapter Six allows for the use of eleven official languages in the country (Republic of South Africa 1996: 1245). The Bill of Rights which is enshrined in the Constitution of the country indicates that people have a right to use or be addressed in a language which they understand. It is also indicated in the Constitution, however, that the rights must not be used in violation of other people's rights.

Strydom and Pretorius (2000) take the issue further in the chapter which deals with the directives concerning language in the new South African Constitution. They look at how different municipalities interpret Chapter Six of the constitution of RSA in the Free State Province, where they conducted a survey. It is indicated that, throughout the study, language was not viewed as

a priority by the municipalities. Strydom and Pretorius (2000) further state that this is despite the fact that language matters are a constitutional imperative, especially the promotion of multilingualism in the country. In an article on a study undertaken for the F.W. de Klerk Foundation, Strydom (2002) focuses on the protection of minority rights, which include language and cultural rights. The arguments raised in this article are that the international laws which govern language and cultural rights ought to be taken into cognisance with the protection of such rights for minority groups in South Africa. He compares South African standards with international standards, and views upholding language and cultural rights as the constitutional obligation of the particular country which has created such laws. In the chapter which deals with Multilingualism, Education and Social Integration (Strydom 2003), he again deals with the South African law and policy on Language in Education. He highlights how different education systems in South Africa have marginalised the indigenous languages, and points out that, while the South African constitution promotes multilingualism, the education systems in South Africa interpret the constitution in ways which perpetuate the dominance of colonial languages (see Webb 2010). In Strydom's view the South African Constitution ought to have paved the way for the implementation of multilingualism, especially in education. He further states that people tend to be sceptical when they are supposed to promote and use different languages, especially in the education sector.

Alexander delivered a keynote address for the FIT World congress in Finland in 2005 on the potential role of translation as a social practice for the

intellectualization of African languages (Alexander 2005). In this keynote address Alexander stated that Africa is the only continent in the whole world that fosters education of their children in a foreign language. In his presentation it is highlighted that, if the European Union can provide translation or interpreting service and foster mother tongue education to the European community, the African Union should be able to do likewise for African communities in Africa.

2.4 Transformation of the higher-education system at the Durban University of Technology

According to section 3.3 of the Language Policy for Higher Education, it is the role of the Constitution to drive transformation:

The values and shared aspirations of a democratic South Africa, which are enshrined in the Constitution of 1996, *require the Constitution*, as Justice Kate O'Regan suggests, *to compel transformation*. She argues that the attainment of the vision of the Constitution is dependent on urgently addressing "the deep patterns of inequality which scar our society and which are the legacy of apartheid and colonialism" (Department of Education 2002: 4).

One of the key areas in transformation has been identified as multilingualism, and the need to "take practical and positive measures to elevate the status and advance the use" of the previously marginalised indigenous languages (Republic of South Africa 1996: 1245). The Pan South African Language Board (PanSALB) Act of 1995 was promulgated "to provide for the recognition, implementation and furtherance of multilingualism in the Republic of South Africa; and the development of previously marginalised languages" (Republic of South Africa 1995).

Focusing on the language situation in higher-education sector, section 3.1.2 of the Language Policy for Higher Education emphasises the right of citizens to “receive education in the official language or languages of their choice in public educational institutions where that education is reasonably practicable” (Department of Education 2002: 3). Obvious constraints are the feasibility of such provisions, which means that most higher-education institutions would have been moving towards achieving this goal since 2002. However, in spite of the levels of legislation set in place to bring about multilingualism in South Africa (Verhoef & Du Plessis 2010: 3), until lately very little progress has been made towards achieving transformation at national level (Webb 2010: 136). To address this state of affairs, renewed efforts are currently being made at provincial level with regard to the Draft KZN Provincial Languages Bill (Department of Arts and Culture KwaZulu-Natal 2011). As Ex-officio Chairperson of the KZN Provincial Language Committee (a substructure of PanSALB) I am one of the stakeholders who have been invited to participate in the process of finalizing the provisions of the Bill, and have in fact participated in an ongoing capacity in various language matters at national and provincial level.

However, universities face the challenge of maintaining a balance between the government’s constitutional obligation to set legislation in place, the individual’s right to choice of language, and the educational institution’s right to decide on a language policy (Verhoef & Du Plessis 2010: 2-3). Apart from this challenge, universities face other challenges (Du Pré 2009: 79-81), in particular, adapting to the reconfigurations caused by the mergers (see

DegreeInfo 2011), in particular, the combining of traditional “advantaged” universities with historically disadvantaged universities. There were other problems associated with the mergers, such as management of not only large, but, in most cases, multi-campus universities. While the mergers were set in place primarily to effect transformation, in some cases transformation was delayed as the universities grappled with the problems brought on by the mergers (Du Pré 2009: 78).

This was in fact the case at DUT. The university merger between the former Technikon Natal and the ML Sultan Technikon was promulgated by the late Professor Kader Asmal, then Minister of Education, in 2001 (Republic of South Africa 2002). In April 2002 the merger took place, with the new institution being named the “Durban Institute of Technology” (DIT), and later the “Durban University of Technology” (DUT), in response to the decision that the former Technikons be now referred to as “*Universities of Technology*” (UoTs, see Du Pré 2009; Shambare & Nekati 2010: 116). As a result of the merger, DIT, later DUT, had an ever-increasing number of English Second Language students who were predominantly isiZulu speaking, while the staff, though more multicultural, remained predominantly English speaking. There was an urgent need to transform the university at all levels, and to this end a Change Management procedure was implemented (Gawe & De Kock 2002). The issue of access to higher education when the majority student population were not mother tongue speakers of the medium of instruction was not dealt with, however, either by offering tuition in English or by introducing an interpreting/translation service.

At this stage, even as early as 2003, the (then) Department of Language and Translation at DUT had the capacity to contribute to the transformation process by offering language tuition in isiZulu for staff as well as piloting an interpreting and translation service for students. Language and Translation was, and still is, the only department in South Africa to offer the National Diploma and BTech Degree in Translation and Interpreting Practice. However, certain key elements were missing. I was at the time the HOD of the above department and Dean of the (then) Faculty of Arts, which roles gave me an overview of the situation in terms of the context (i.e. needs and resources); I also had the necessary organisational capacity, both in terms of my translation and interpreting experience, and my position as Chairperson of the KwaZulu-Natal Provincial Language Committee (KZN PLC). However, there was instability at Management and Council level, to the extent that an external Administrator had to be appointed (Mchunu 2006; The Skills Portal 2006). DUT was then, and even later, plagued by the “revolving door syndrome”, whereby it had four Vice-Chancellors (VCs, who acted as Principals) in a five year period, and changing (or acting) Deputy Vice Chancellors (DVCs) within the same period. There was general agreement amongst academic staff that the damage done to the academic programme in the post-merger period was “well nigh irreversible” (Pratt 2003).

The factors lacking in the implementation of a translation and interpreting service were its being sanctioned by some form of Management buy-in, as well as the provision of necessary technical equipment (i.e. mobile

simultaneous interpreting equipment). The very policies which might have further authorised implementation were delayed through their being “aligned” (i.e. between the former Technikons) as a Quality Management measure. The DUT Language Policy, which promotes multilingualism, and was not finalised (i.e. by sanction of Senate) until 1 September 2010, and was approved by Council only on 27 November 2010 (Durban University of Technology 2010), The provision of a translation and interpreting service was not actively supported by Management until Professor Roy du Pré, then VC, supported the service both by making funding available and by publicly acknowledging the provision of an interpreting service at DUT Graduation Ceremonies in 2009. Professor du Pré also initiated the practice of translating Council and VC Communiqués into isiZulu, as well as making funding available for the equipment needed for simultaneous interpreting at graduation ceremonies: this could then be used in classroom as well as conference interpreting. The purchase of equipment combined with management support made it possible to offer an interpreting service at an in-house conference (Makhubu 2009a) as well as to continue offering classroom interpreting in a pilot study carried out for Dental Assisting, but in subject lecture venues rather than in the Interpreting Laboratory (a classroom interpreting service had been piloted with Dental Assisting since 2007, but using fixed equipment available only in the premises of the Department of Language and Translation). Previous to the funding being made available by the VC, funding from the SANTED Project had been used to promote multilingualism from 2006-2009 (Makhubu 2007; 2009b; 2010a; 2010b).

It must be emphasised that the situation at DUT, while having factors in common with other universities (e.g. numbers of students who were not mother tongue speakers of the medium of instruction) had context-specific contingent circumstances which impacted on the introduction of educational interpreting. These contingent factors included merger experiences which were different from those in other universities, and, after the merger, different staff/student demographic configurations, as well as a succession of different management styles, owing to the rapidly changing management at DUT. The issue of language policies and the mechanisms set up to deal with transformation through language units (e.g. the “Directorate” type department set up at North-West University) has been dealt with differently at different universities, with some units having greater executive power than others: the DUT Language Unit, while a provision of the DUT Language Policy, has yet to be established. At provincial level, each province has its own Language Policy (Department of Arts and Culture KwaZulu-Natal 2009), and currently KZN is in the process of drafting its own Provincial Languages Bill (Department of Arts and Culture KwaZulu-Natal 2011): the DUT Language Policy may need to change to accommodate any new - or changed - provisions of the Bill.

Even the status of the different media of instruction has consequences for interpreting service delivery. For example, English as used as the medium of instruction at DUT holds its hegemonic position as a remnant of colonial imposition, yet enjoys status as the lingua franca of Commerce, and holds the promise of access to globalisation and international marketability (Pöschhacker 2004: 199; Webb 2010: 137). Finally, DUT’s relatively new status as a UoT

makes it a different setting from traditional universities, in terms of its close connection with Industry; DUT, like other newly-formed UoTs, is still struggling to define its role (Du Pré 2009).

2.5 Educational interpreting

In this section, the notion of what is meant by the term “educational interpreting” will be discussed both generally and as applied to the DUT context (as outlined above). Up until recently, the field of educational interpreting referred to interpreting classroom teaching/learning by means of Sign Language, and little or nothing was said about the interpreting of *verbal* languages, where the mother tongue of the student was different from the medium of instruction used in the classroom.

As Pienaar (2009) points out, Verhoef and Du Plessis’s *Multilingualism and educational interpreting: innovation and delivery* (1st impression, 2008, latest impression, 2010) is so far the only volume dedicated to this area of interpreting. Verhoef and Du Plessis’s pioneering work goes some way towards delineating this area, as follows. The first two chapters establish the status of interpreting as a mechanism for promoting multilingualism in the educational context. Verhoef and Du Plessis (2010: 1-17) show how an interpreting service is a practical way of effecting multilingualism in the classroom. However, they emphasise that, to promote multilingualism, there needs to be a balance between the government’s constitutional obligation to set legislation, in place, the individual’s right to choice of language and the educational institution’s right to decide on a language policy (2010: 2-3). Du

Plessis (2010: 18-31) points out the consequences of a mismatch between institutional policy and using interpreting as a means of providing equity of access and promoting multilingualism: the current Language Policy at the University of Free State (UFS) does not represent interpreting as a “viable option” for teaching and learning, possibly because it might have been viewed as undermining the teaching policy (e.g. as regards parallel medium) which had developed at UFS (2010: 27).

The rest of the chapters deal with research into various aspects of the educational interpreting service implemented at North-West University (NWU) since 2004. Verhoef, one of the book’s co-editors, achieves a *tour de force* by not only co-authoring two chapters, but also by sole-authoring three chapters. In the first of the latter, she interrogates the issue of quality management in educational interpreting at NWU, and formulates a quality management model designed to take into account the commonalities and variables in the complex process of interpreting in a higher-education context (2010c: 47-66). In the second (i.e. sole-authored) chapter she describes a study on end user perceptions of two different types of interpreters, those with and those without specialist academic subject knowledge, concluding that quality performance does not primarily depend on subject knowledge (2010b: 114-134). In the third sole-authored chapter, she looks at the paralinguistic and nonverbal communication in the interpreting service delivered at NWU. She emphasises the interpreter’s role in actively mediating classroom communication in the teaching/learning context. Using Foulger’s (2004) model of communication to illustrate the intricate layers of interlocutor, message, language and medium in

communication (2010a: 163), she concludes that the classroom interpreter has to comprehend the gist of the entire classroom interaction so as to make teaching/learning accessible to all students, thus contributing to an environment conducive to teaching/ learning.

The sheer scope and scale of the operation involved in providing simultaneous interpreting for the classroom context at NWU (Olivier 2010: 101) has not only provided plentiful data for research, but also, as Blaauw points out, user feedback which can be used in interpreter training to refine the quality of the service (2010: 36). Blaauw describes a model for interpreter training which, as Verhoef comments, is not limited to educational interpreting (2008: xiii). Partridge presents an exploratory study of elements influencing educational interpreters' performance, starting from a consideration of cognitive theory and Gile's effort model (2010: 67-70), and going on to identify factors which might affect the quality of interpreting (2010: 71-77). De Kock and Blaauw (2010: 82-98) describe research into the duration of interpreter sessions in educational interpreting (mainly classroom), comparing this with the duration of sessions in other modes and types. Olivier looks more closely at the differences between two types of interpreting, conference and classroom interpreting and the roles the interpreters in these contexts see themselves playing (2010: 99-113). Bothma and Verhoef (2010: 135-159) show how educational interpreters have an active role in mediating teaching and learning in the classroom, and that the challenge lies in facilitating classroom communication. Mathey explores applying the NWU educational interpreting model (2010: 179) in the context of the secondary school, and concludes that it has certain advantages, mainly in

keeping the learner group inclusive, while at the same time introducing them to language diversity. He points out that educational interpreting could be viewed as a “fourth mode” to add to the current three modes of classroom delivery, namely single medium, dual medium and parallel medium.

2.5.1 The nature of educational interpreting

In *Multilingualism and educational interpreting: innovation and delivery* (2010), while other types and modes are mentioned, the focus is predominantly on classroom interpreting. At this stage, I would like to open up the whole issue of educational interpreting in terms of whether it does in fact represent a specific type of interpreting. This is not to dispute the use of the term “educational interpreting”, which is a useful label, but merely to point out that interpreting may take place in different settings within the same educational institution, particularly in the higher-education context, where seminars, in-house conferences and ceremonial university functions such as graduation take place. Blaauw, for example, mentions that at NWU an interpreting service is offered in the context of operational meetings (e.g. Council, Senate and certain Management Committee meetings, 2010: 32). Some writers prefer to use the term “classroom interpreting” rather than “educational interpreting”: Olivier and Lotriet use the term “classroom interpreting” in both their title and text (2007). While Clausen uses the term “opvoedkundige tolking”, that is, “educational interpreting” (2011: 118 ff.), her study actually focuses on classroom interpreting (“klaskamertolking”) at various universities.

In order to cater for the need for an interpreting service at a university such as DUT, it would be necessary to consider not only the academic activities of students in the lecture room (and tutorials), but also provision of interpreting in the following contexts (the list is not necessarily exhaustive):

- conferences (e.g. in-House mini-conferences and seminars) (see Blaauw 2010: 32)
- operational meetings (e.g. Council, Senate, certain Management meetings such as AEM) (also in Blaauw 2010: 32)
- ceremonial university functions (e.g. Graduation, Inauguration)²
- mediation/labour-type meetings (e.g. disciplinary or grievance meetings, disputes)

This is not to suggest that all of the above interpreting (and associated translation) needs could necessarily be accommodated, and, even if they could, certainly not all at once, but to indicate that there is a need for interpreting services in these areas at DUT. A model of interpreting service delivery such as that envisaged for this study, then, would need to be comprehensive enough to encompass these additional needs as well as the need for classroom interpreting. As I mentioned above, this brings into question the issue of what constitutes “educational interpreting”. While it is convenient to use a term relating to the educational context in which interpreting occurs, this should not be seen as referring only to classroom interpreting. Moreover, an aspect not hitherto dealt with is that translation supplements and complements the transition to multilingualism in the above contexts, and in some cases is the sole medium (e.g. in the context of

² It must be remembered that South Africa, with its 11 official languages, requires “ceremonial” interpreting for presidential inaugurations, state of the nation addresses, and Parliament.

translating DUT Council and VC Communiqués mentioned above). The processing of highly technical research texts, as well as the writing of masters and doctoral theses, requires a translation service geared to research texts (see Pöchhacker 2010: 3, who makes a similar point for conference interpreters). However, as this study focuses on providing an *interpreting* service, it is beyond the scope of this research to follow up this line of inquiry, except in passing where translation has been used in conjunction with the interpreting service piloted at DUT.

2.5.2 Types and modes of interpreting

Part of the problem of accommodating the interpreting needs identified in an educational milieu is the variety of terms used to categorise interpreting. To the lay person, all interpreting is just “interpreting” (Garber 1998: 910); academics who are not practitioners tend to use theoretically-based divisions which do not always match actual interpreting practice; and practitioners tend to view divisions in terms of professional status (Mikkelsen 1999). As an academic who is a practising interpreter, I would agree that there are definite categories of interpreting, but am aware that there are also grey areas. This has relevance for my study, as a model of interpreting service for DUT would need to accommodate the different contexts within the university in which interpreting is needed, and not just the lecturing situation; it would also need to take into account which types/mode(s) would be appropriate (as well as feasible) in each context. The terms most commonly used to categorise interpreting are “types” and “modes” (or a combination of type and mode, see Alexieva 1997). While there is general agreement on the two major working

modes, consecutive and simultaneous (Pöchhacker 2004: 183-184), there is less agreement on the issue of types.

At face value, types might include categories such as “government, conference, private sector, church or education” (De Kock & Blaauw 2010: 88). It is generally agreed that the type of interpreting usually dictates the mode, but this can differ internationally. For example, Kalina points out that court interpreting (i.e. in Europe) habitually involves several modes (2002: 174), but in South Africa, in my own experience the predominant mode is consecutive (supported by De Kock & Blaauw 2010: 88). In educational interpreting the distinctions are not so clear cut, owing to the variables operating in this context (2010: 88-89).

Interpreting is usually categorised into types in terms of the context or setting in which it occurs, which suggests that context is an important factor in deciding what type of interpreting will take place. Pöchhacker (2004: 13-15) identifies various types grouped in terms of social context and institutional setting, showing how they evolved over time into the categories currently recognised today, which he gives as:

- business interpreting
- liaison interpreting
- diplomatic interpreting
- military interpreting
- court/legal/judicial interpreting

- educational interpreting (predominantly sign languages until recently)
- community-based interpreting (public service/cultural)
 - healthcare interpreting (medical/hospital interpreting)
 - legal interpreting (i.e. as a subset of community-based interpreting)
- media interpreting (broadcast – often TV)
- conference interpreting
- parliamentary interpreting

Even so, many of the above categories overlap, if one takes into account the “constellations of interaction” mentioned by Pöchhacker (2004: 15-16). Moreover, not all writers agree on this kind of typification of interpreting or the resultant types. For example, “liaison interpreting” is considered by some interpreters as being an umbrella term (also known as “community interpreting” or “public service interpreting”) for a wide category, ranged alongside conference interpreting. Gentile rejects the term “community interpreting” and “all types based on setting, technique, language direction or social dynamics”, preferring the term “oral bilingual mediation” for all interpreting (Gentile 1997: 117 ff., in Kalina 2002: 172). Mikkelsen emphasises that there should be some point in classifying interpreting, over and above “mere divisiveness”, and suggests that the traditional labels are not only “inadequate” but also contribute to “divisiveness” amongst interpreters (1999: 1-2).

However, as Kalina points out, the different types “sometimes stand for different concepts and approaches, as requirements, expectations, tasks and

roles may vary from one setting, context or situation to another” (2002: 172). This, then, might make a typology useful in determining details of the interpreting service required in given settings. Garber, while expressing a wish that all interpreting be called “plain interpreting” (1998: 9-10), concedes that some kind of qualifier is needed to alleviate confusion about the type of interpreting taking place (1998: 12). However, he would disagree with Pöchhacker’s subsuming of healthcare and legal interpreting under the heading “community interpreting” (1998: 14). He views this as a case of overlap, rather than a hierarchy. Continuing with the notion of overlap, Garber comments: “The areas of overlap represent shared attributes or elements, enabling us to see that different types of interpreting share some elements and yet have unique an distinctive characteristics of their own” (1998: 15).

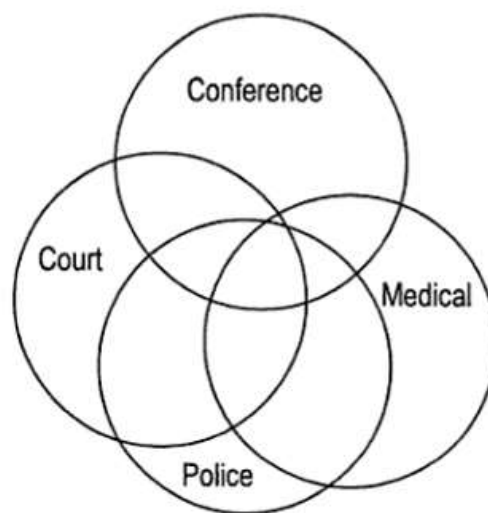


Figure 2.1 Areas of overlap in interpreting types (in Garber 1998: 15).

Mikkelsen gives the following list of interpreting categories (the first three relating to modes, the rest based on “the setting or the subject matter of the interpreted event” (1999: 3-5):

- Simultaneous interpreting
- Consecutive interpreting
- Whispered interpreting (or “chuchotage”)
- Conference interpreting
- Seminar interpreting
- Escort interpreting
- Media interpreting
- Court interpreting
- Business interpreting
- Medical interpreting(health care interpreting and hospital interpreting; (possibly) mental health interpreting, medical-legal interpreting)
- Educational interpreting
- Over-the-Phone Interpreting (OPI)
- Community interpreting (liaison, ad hoc, three-cornered, dialogue, contact, public service, and cultural interpreting)

Note that Mikkelsen has listed the types in the order of the (unofficial) hierarchy³ of interpreter status (1999: 3), which is why she sees this kind of typification leading to “divisiveness” amongst interpreters. Being a court interpreter herself, she does not classify court interpreting as a subset of liaison interpreting, as many do.

³ In Europe, that is.

Having listed these categories, Mikkelsen make a comment with which I very much identify as a practising interpreter:

The interpreting categories listed in Section 3 above tend to focus on the setting, the mode of interpreting, or the subject matter of the interpreter-mediated event. Individual interpreters may wear a variety of hats, working one day in a conference, the next in an escort situation, and the next in a court proceeding. Thus, when someone identifies himself as a conference interpreter, that does not necessarily mean that he interprets only in conferences. The interpreter's working languages are a major factor influencing the type of interpreting he performs; hence, an interpreter of French and German has a wide variety of options to choose from, depending on education and training, aptitudes, and the local job market, whereas an interpreter of Somali, no matter how skilled, will not have many opportunities to interpret conferences or business negotiations. In other words, *the categories are not very helpful for describing the job of a particular interpreter* (1999: 9, my emphasis).

Mikkelsen recommends an alternative typography drawn up by Alexieva (1997). Alexieva comments on the limitations of “single-parameter” categorisation of types (i.e., on the basis of either setting, input text or intertextuality⁴) and suggests instead a multi-parameter approach based on both mode of delivery and elements of the communicative situation (1997: 157). The difficulty with this approach lies in dealing with the infinite number of variables involved in actual instances of interpreting, for which Alexieva offers prototype theory⁵ as a solution, and arrives at the following parameters to categorise interpreting:

- mode of delivery and production
- participants in interpreter-mediated events
- the topic of an interpreter-mediated event
- text type and text building strategies
- spatial and temporal constraints
- the goal of an interpreter-mediated event (1997: 157-168).

⁴ The notion of “intertextuality” refers to “scientific and technical conferences”, which possess macro-texts grouped either as didactic (i.e. knowledge dissemination) or discursive.

⁵ Prototype theory, according to Alexieva, involves using groupings of “families” with central and peripheral members rather than rigid categories.

According to Alexieva, “an interpreter-mediated event may be located along a ‘continuum of universality’ vs. ‘culture-specificity’ using a number of scales:”

- ‘distance’ vs. ‘proximity’ (between speaker, addressee and interpreter);
- ‘non-involvement’ vs. ‘involvement’ (of the speaker as text entity);
- ‘equality/solidarity’ vs. ‘non-equality/power’ (related to status, role and gender of speaker and addressee, as well as the interpreter in some cases);
- ‘formal setting’ vs. ‘informal setting’ (related to number of participants, degree of privacy, and distance from home country);
- ‘literacy’ vs. ‘orality’;
- ‘cooperativeness/directness’ vs. ‘non-cooperativeness/indirectness’ (relevant to negotiation strategies);
- ‘shared goals’ vs. ‘conflicting goals’ (1997: 169).

Mikkelsen suggests that Alexieva’s approach would allow “for a more precise analysis of interpreting in real-life situations” (1999: 10). Alexieva’s model finds resonances in Pöchhacker’s eight dimensions mapping out “the broad spectrum of phenomena to be covered by theoretical and empirical research in interpreting” (2004: 24): (1) medium; (2) setting; (3) mode; (4) languages (cultures) (5) discourse; (6) participants; (7) interpreter; (8) problem.

However, as both Alexieva and Pöchhacker comment, interpreting is too complex a phenomenon to be easily explained, and Pöchhacker concedes that his diagram “cannot admit to being a combinatorial map of features”, and that it does not represent a “continuum of descriptive features (i.e. as Alexieva’s does) but a set of examples of major research concerns to date” (2004: 24). It would then seem that an actual analysis of the practising interpreter’s experience in the interaction, as described by Alexieva, has some parallels with the main features of interpreting research, as described

by Pöchhacker. It is reassuring to think that research into interpreting and the realities of actual interpreting practice are not that far removed, and might meet somewhere midway.

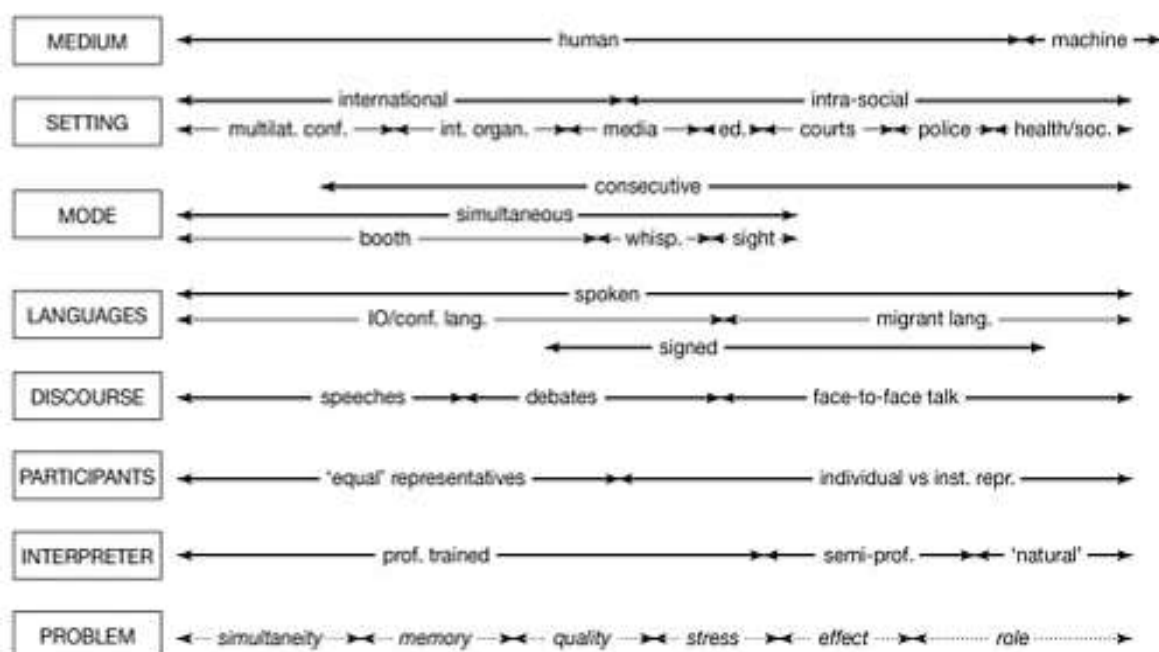


Figure 2.2 Domains and dimensions of interpreting theory (Figure 1.5 in Pöchhacker 2004: 24)

Alexieva's categories, then, might prove useful in avoiding blanket categories signalled by types, including "educational interpreting", at least by signalling the wide variety within stock types (she comments on the use of a multi-parameter approach in interpreter training). It is not the purpose of this study to define "educational interpreting", however, but to provide a model for an interpreting service in different *contexts* within a UoT, fitted to both the different *purposes* for which it is used as well as the different *target groups* (and their

demographics, including *linguistic* competences). It may be a misnomer to categorise this interpreting service as “educational interpreting” unless the term is unpacked so as to fit the perceived interpreting needs at DUT. To do so, the term “educational interpreting” would need to be extended to include conferences and seminars, key operational meetings, university ceremonies and mediation/labour-type meetings, all of which are part of university life in the context of a multilingual UoT.

2.6 The processes involved in interpreting

This section will look at interpreting in the context of the communication process. It will then show how elements of the communication process contribute to an understanding of the main issues involved in the interpreting process.

2.6.1 The communication process

Linear models of communication do not show all aspects of a highly complex and layered process (e.g. negotiating meaning) but, as Fielding (1993) states: “The linear model of communication helps to analyse major elements in the communication process...*meaning is created by both the sender and the receiver both working together*” (my emphasis). He adds: “People need to share the same meanings for words, concepts and ideas if they are to communicate effectively” (Fielding 1993: 18). When multilingual interactants are involved, the different languages spoken present barriers to shared meaning. A key issue in interpreting is to ensure that people communicate

effectively by ensuring that the language barriers are overcome and meanings are shared as closely as possible.

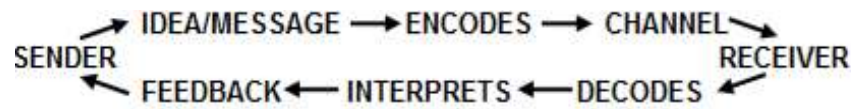


Figure 2.3 Desmond Evans' model of communication (Evans 1987: 19)

Desmond Evan's model (as shown in Figure 2.3) is one of the best known linear models of the communication process, and is often used in Business Communication courses at undergraduate level, as it shows the stages in the process. This makes it possible to anticipate at what stage communication breaks down, and to anticipate possible problems in advance, or fix them once they have happened.

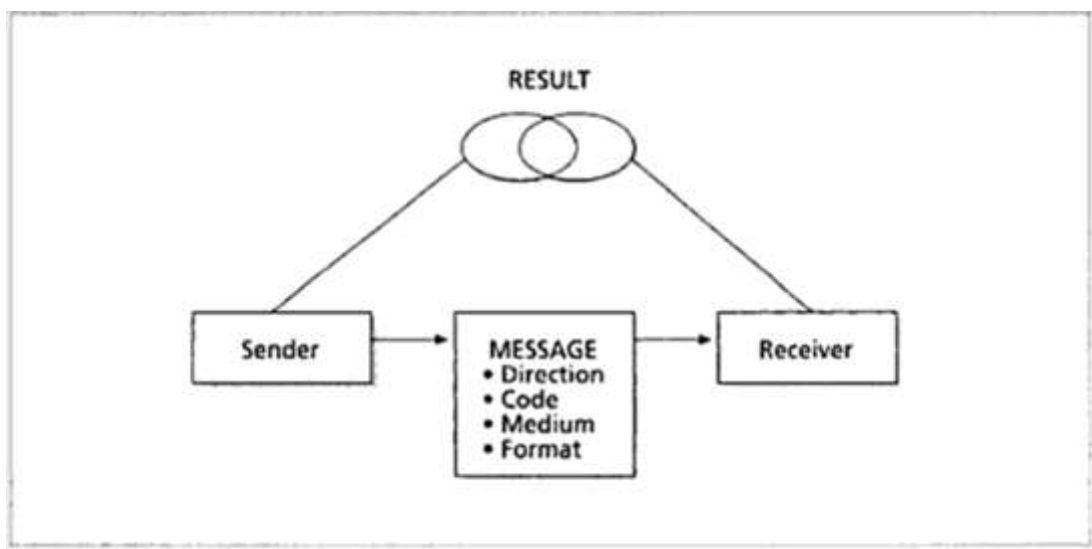


Figure 2.4 Elements of the communication process (in Fielding 1993: 14)

By contrast, Fielding's (still linear) model in Figure 2.4 focuses only on the sender, receiver and message, so as to show the implications for interpreting. Similar stages to those in Evans' model are still represented in Fielding's model, but not as stages, rather as elements affecting interpreting of the message only (e.g. direction, code, medium and format).

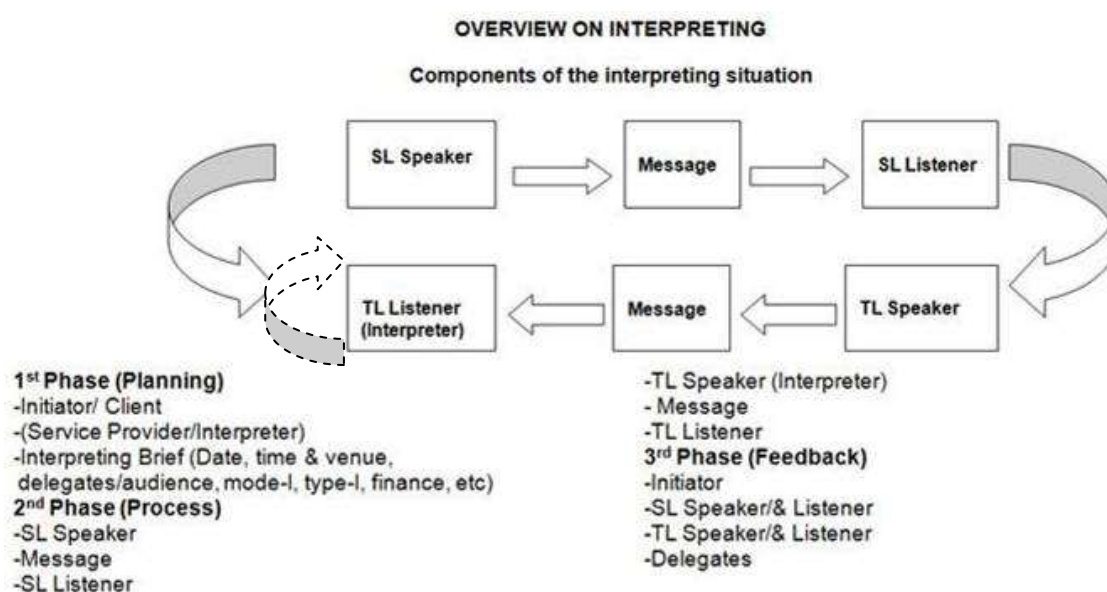


Figure 2.5 Description of the interpreting process (from Makhubu 2011)

2.6.2 The interpreting process

The model of the interpreting process used for lecturing purposes in the Translation and Interpreting Practice TIP programme at DUT over the last ten years, with slight modifications, is shown in Figure 2.5. It is based on Fielding's model, focusing on the elements of the communication process which show it as an interaction between a sender and receiver (see Figure 2.4), to arrive at a description of the interpreting process. Fielding's elements are represented as the "components of the interpreting situation" represented

in Figure 2.5. The interpreting process is represented as having three phases, planning, process and feedback.

a. Phase 1: Planning

The first phase, the planning phase as shown in figure 2.5, occurs when the initiator or the client who requires the interpreting service to be provided approaches the interpreter, who may also be the service provider. It has to be pointed out that the interpreter may also not be available to interpret, and may rather refer or subcontract somebody else to deliver the interpreting service. During the conversation between client/initiator, the latter would have to give details of when and how s/he requires the service to be provided, which is the interpreting brief. The interpreting brief thus would give details, for example, about the date, time, venue, target audience and, most importantly, what the meeting would be about. Based on the interpreting brief, the interpreter/service provider would then first establish his or her availability, and then *inter alia* whether s/he would be able to provide the service, based on various factors such as ethical issues and the language combination/s involved. Once it is established that the interpreter is indeed available and the details about the target language combination are stated, then the interpreter would determine, and then suggest, the appropriate mode and even type of interpreting for the provision of the interpreting service. Both the parties would then have to agree on the financial implications, in other words, how much it would cost the client for the services of the interpreter, as well as any technical support (including technical staff and equipment).

b. Phase 2: Process

The second phase focuses on the interpreting process itself, where the source language (SL) speaker would deliver the message in one language to the SL listener, the interpreter (as well as any of the audience who might understand the SL without mediation). The interpreter then has to listen and process the message received, and, next, convey the message in the desired target language (TL) in order for all other TL listeners to understand what is being said by the SL speaker.

c. Phase 3: Feedback

The third phase deals with any feedback which the TL target audience may wish to give to the SL speakers. Should the TL listener wish to interact or respond to the message of the SL speaker, s/he is now the initiator, who would then state the message in the SL language to the interpreter. Then the interpreter has to convey the message back from the TL listener (now the TL speaker) to the SL listener (who was in fact the SL speaker and initiator of the communication). The arrows indicate that the process could go on for as long as is necessary for the message/s to be conveyed. The interpreter thus acts as both SL listener and TL speaker of the language.

While this model shows interpreting as a process in phases, which are at surface level similar to some of the phases mentioned by Kalina (2005), as discussed below, it was not considered as the basis for a model to provide interpreting services at DUT. This is because it deals only with the interpreting process itself and not some of the key prerequisites needed for service

delivery to take place. However, planning, process and feedback (although in a regulatory sense) are elements which feature in the model of interpreting services developed, but as part of the “system of functions”, not phases as such.

2.6.3 Further key aspects of the interpreting process

It must be remembered that there are two modes involved in interpreting, consecutive and simultaneous. Chernov (1979) elaborates on interpreting theory by focusing on simultaneous interpreting as a model which normally involves simultaneity of listening and speaking. Gile (1995) in his “effort model” indicates that interpreting is an effort, itemises those main efforts in an attempt to allow student interpreters to understand where their weaknesses may lie, and states that interpreters use “coping tactics” during the process of interpreting. By the same token, in the interpreting processes which occur in the world organizations, the government and other settings, Gile’s (1995) effort model⁶ is applied, and the “coping tactics” mentioned by him are used by interpreters throughout the world.

2.6.4 Interpreting as a social process

Apart from the mechanics of the process, interpreting involves the intersection of various diverse fields, such as linguistics, psychology, anthropology, technology, health, law and commerce (Walter de Jongh in Moeketsi 1999) which relate not only to the interpreting process itself but the various contexts

⁶ Although Gile’s model is a cognitive model, it can be seen to be applicable in actual instances of interpreting.

in which interpreting occurs. Pöchhacker identifies some of the various approaches to research in the field, all with their preoccupations and focus:

The interpretive theory of the Paris School, research on mental processes rooted in the cognitive and even neuro-sciences, approaches from translation theory foregrounding communicative functions and (target) cultural norms, and analyses of (interpreted) discourse in cross-cultural interaction within social institutions all offer a broad range of insights into interpreting, covering many, but by no means all, facets of the phenomenon (2005a).

The main focus up until now has been on linguistic aspects, as indicated by Dias and O'Neill (1998), but there has recently been a change of focus to looking at the social contexts in which interpreting takes place, in other words, to view interpreting as a situated social practice (Wallmach 2002; Pöchhacker 2005b; Wittezaele 2008). The interpreting process then, like communication, should be seen as a social process with certain givens or commonalities but also with infinite variations brought on by the specific contexts in which it occurs. Bourdieu's sociological approach (in Potter 2000) looks at the social implications of language as a mechanism for setting in place power relations, including the right to speak, to interrupt, to be listened to, to ask questions, and so on (Wadensjö 1995; Wallmach 2002). However, while the regulation of the communicative interaction is obviously a key issue in the interpreting process, there are other aspects of communication which also apply. Discourse approaches (Mason 1999) focus on the social aspect of language, but these tend to focus on the linguistic aspects of the interaction, although Roy (2000) looks at turn taking. This is because the post-modern emphasis on language and meaning (Wadensjö 1995) still dominates social approaches to communicative interactions.

2.6.5 The approach to interpreting adopted in this study

Rather than looking at specific aspects of interpreting as discourse in specific contexts, however, this research will look at the macro-processes involved in offering an interpreting service which would be both effective and feasible for a multicultural university such as DUT. The emphasis will be on both the mechanism/s involved and the social context in which interpreting takes place. For this reason, a critical realist approach (Bhaskar 1978) will be used which looks at interpreting as a socially-situated process with a common set of functions but infinite permutations and outcomes, influenced by the variables impacting in any given context. This shares similarities with Bourdieu's approach (Potter 2000), except that causal mechanisms (Bhaskar 1978: 51-52) would be involved in a critical realist approach:

Bourdieu would see relations existing on the same ontological plane as the observed entities (if he were pushed into an ontological corner), whereas the CR tradition would look at the causal mechanisms that, because they are more fundamental, permit observable entities to come into being, yet there seems to be a great similarity between the two traditions (Weissengruber 2000).

It must be emphasised, however, that the social mechanisms involved in processes such as communication, and hence, in the mediated process of communication in interpreting, have interactive rather than causal determination (Pratt 2011: 148): this is because they are processes which are generated as part of social functioning, and, while subject to cause and effect (i.e. in the form of input into the social system), cannot be described in terms of causality alone. Models of social mechanisms with interactive determination are more likely to have prognostic than predictive force (Judd 2003: 54).

2.7 Models as applied to interpreting

Modelling is a typical preoccupation of critical realism, as researchers attempt to gain insight into social practices (Pratt 2011: 37). It must be stressed, however, that the term “model” has wide application. When applied to interpreting, the term “model” can refer to a list of the various contexts or situations in which interpreting takes place (Health Canada 2006), or the interpreting process itself (Chernov in Pöchhacker & Schlesinger 2002). Gile’s “effort model” focuses on the cognitive effort required in interpreting, and the “coping tactics” used during the process of interpreting. When applied to *providing* the actual interpreting, a “model” could refer not only to various contexts, but also issues relating to those contexts, for example, ethics (i.e. of health service delivery), resources (including costs) or regulations/policies governing the service (TISSA 2002; Verhoef & Du Plessis 2010). In fact a criticism of existing service delivery models is that they are primarily descriptive, often containing context-specific items such as statistics and evaluations from various participants. As Bowen comments (2001: 46):

Most of the research in this area is descriptive - it describes the development of programs, the service model and how it works, and often includes service statistics and evaluations from patients, providers or collateral agencies (Cross Cultural Health Care Project, 1995; Hemlin & Mesa, 1996).

The most serious problem then, is that it is difficult to compare and/or evaluate the various models available as they do not have a consistent frame of reference or components (a problem shared by models of *interpreting* itself, i.e. as opposed to service *delivery*). Such models might be socially situated, but they are considered to be problematic in terms of being *too* context

specific, and not generalisable, i.e. able to be applied elsewhere (see Franck 2002: 297).

For this reason, in this study Franck's (2002) modelling process will be used, in which a system of functions is identified as the theoretical basis for the social practice, facilitating the formulation of an applied (or empirical) model showing the mechanism(s) which effect this practice. This enables the researcher to identify the commonalities and variables in any given social practice, and makes the resulting theoretical model generalisable, i.e. applicable in diverse social contexts. A model of interpreting service delivery developed by this process might then have the potential to be applied internationally and not just in the DUT - or South African - context. As will be explained more fully in the Methodology section, a model identifying the system of functions required for a social practice to occur and the mechanism(s) whereby this practice is effected (Frank 2002) is thought to be an advance on the models of interpreting service delivery hitherto identified. This is because a model of functions provides not just a description of a social service or process but the means whereby it can be carried out (Mironesco 2002: 181; McCarty 2003: 3), with the potential for improving service delivery.

2.7.1 The relationship between theory and models

Before proceeding with a discussion of models relevant to this study, it is necessary to clarify the relationship between theory and models. Since a model is a simplified representation of a phenomenon which abstracts certain elements for the sake of clear explanation, it could be considered to be a type

of theory. It is in fact listed as such in Allmendinger's six broad categories of theory (derived from Judge, Stoker & Woman, 1995), which are useful in categorising the *type*, *focus* and *scope* of any given theory. According to Allmendinger, "*Theorising* generally is a catch-all category that covers thinking and debating ideas and other theories as to their suitability", while: "*Models* are more simple representations and pictures of reality that do not always include hypotheses but are still testable" (2002:8-9). Pöchhacker's account of modelling (2004: 84-85) is very much along the same lines. Allmendinger suggests that we should not make rigid distinctions between various types of theories and/or models, saying that there are overlaps between the categories he identifies. However, Bhaskar points out the necessity for distinguishing between models, theories and paradigms:

Needless confusion has been engendered by the failure to distinguish models, theories, paradigms, etc. Very roughly, a theory is a model with existential commitment; that is, a model conceived, and meant to be taken, as true; i.e. a model in which the entities posited and mechanisms described are conceived as real. It is relatively easy for the scientist to invent models, but much more difficult for him to construct theories (1978:192).

Bhaskar sums this up by stating that, while theories must involve some form of modelling, all models are not necessarily theories. This point is carried through in Franck's modelling process, which to some extent explains both the "overlaps" and the distinctions. For example, Franck states that a model showing the material causal aspects of a mechanism is not a "theoretical model": to qualify as such it would need to include the formal systemic relations which explain the causality (and hence, the social phenomenon) at a theoretical level (Franck 2002: 96).

2.7.2 Modelling social mechanisms

In this study interpreting is considered to be a social mechanism involving a complex process carried out by human agency: a mechanism with interactive rather than causal force. These concepts will be discussed in more detail in Chapter 3, Research Orientation and Methodology, but for now the concept of modelling will be explored in terms of setting the scene for the modelling process used in the methodology. Mechanism is a key term in both critical realism and the modelling process used in this study. According to Franck:

Researchers working in social sciences often treat the word “mechanism” as a synonym for “process”. These words both serve to indicate a sequence of events which gives rise to observable phenomena. But “mechanism” emphasizes, more than “process”, the idea that the sequence of events that has given rise to the observed phenomena is not fortuitous, but rather obeys definite forms (2002: 88).

The point of formulating models of social mechanisms is to provide insights into the operation of social processes such as interpreting. Such insights might transform social practices by giving participants more control over them, or at least preparing them for what is likely to happen, in terms of prognostics or diagnosis, that is, not prediction.

The literature on models of interpreting as well as on interpreting service delivery illustrates that, as in other social science fields, the term is used with a wide range of meanings. While it is not the aim of this research to offer a taxonomy of models, it must be noted that the term “model” is used in the literature on interpreting for very different formulations, ranging from anecdotal descriptions of types - or purposes - of interpreting to complex abstract models, sometimes framed in mathematical terms. A rough hierarchy can be

seen in moving from a level of less abstract to more abstract representation, unlike Pöchhacker's levels, which move from the context of synapses to socio-cultures or vice versa (2004: 85). Whatever the level of abstraction, it is the position of this study that all of the above types of models serve a purpose in having the potential to explain social practices, depending on the context, purpose and audience, even the category which Cerney (2005) terms "metaphors". A literal description of an interpreting service delivery process (even in a different context) might be useful to a service provider (e.g. a Government official) who has no expertise in the field of interpreting or experience of the specifics of actual implementation. Process models, as Franck suggests, are "models that attempt to formulate a sequence of events or operations through which a behaviour occurs as it does" (2002: 13). These may give people practical ways of understanding what to do in a given situation without necessarily being informed by theory. Mind maps by an expert in the field can assist novices to grasp key concepts. Abstractions and mathematical representations may not be accessible to non-expert viewers, or useful for practical implementation, but they can inspire theoretical developments by specialist researchers in a field, and, being generalisable, can more easily be applied in other contexts or fields. Abstractions which grasp the underlying systemic relations of a social process can be very useful when used to inform practical applications, as this study will attempt to show.

It must be emphasised, however, that not all models, even abstractions, are considered to have theoretical status. Pöchhacker suggests that models represent a type of theorizing, when he states: "As a basic form of **theorizing**

they [i.e. models] can express intuitive assumptions and ideas (memes) about a phenomenon”, and “modeling can be regarded as a particular form of theoretical endeavour” (2004: 84). This is valid only in the sense that everything we think could be termed a type of theory (i.e. as fitting in Bhaskar’s domain of empirical, Bhaskar 1978: 56). But when Pöchhacker goes on to talk about “theoretical models”, it must be stressed that this study takes the position that not all models have theoretical force, *even those informed by theory*, and that the modelling carried out in this thesis follows Franck (2002) in distinguishing between a theoretical model (the formal aspect of a social mechanism) and an empirical model (the applied aspect of a social mechanism). This position will be explored in more detail in Chapter 3, Research Orientation and Methodology.

Bunge accounts for the wide variety of model types as follows:

There are as many idealisations as idealisers, data and goals. Even if two model builders have access to the same empirical information, they may construct different models, for model building is a creative activity engaging the background, abilities and tastes of the builder (1973:96, in Franck 2002: 7).

Franck would disagree with both Pöchhacker and Bunge:

That train of thought [i.e. as expressed by Bunge, above] can count many, if not most, social science researchers among its passengers. Model building might be left to the creative flair of the researcher. Models might only be judged at a later stage, by evaluating their theoretical or experimental fruitfulness. I don't share that point of view. We need to discover the criteria which should guide the construction of a "good" model and which should help to bridge the gap between empirical and theoretical research. These criteria, we will see, may be compatible with the uncertain, exploratory creative or even imaginary character that a "good" model can have (2002: 7-8).

Franck's contention is that it is this very wide variety in model construction which makes it impossible to compare or evaluate various models, even when they are modelling the same social practice. This he sees as a problem in social science, obstructing progress in building up theory in a field, as there are too many variations for any consistency or agreement. Pöchhacker echoes these sentiments when summing up the difficulties experienced in formulating and validating a comprehensive model of interpreting (2004: 106-107). Franck also sees it as a problem ("malaise") in the social sciences that there is very little connection between practical and theoretical research, or interaction between practical and theoretical researchers: "It is widely agreed that the empirical work would be better aimed were it based on firmer theoretical underpinnings" (2002: 1). His solution is that descriptions of social mechanisms should contain a theoretical as well as practical aspect.

According to Franck, a practical model informed by theory, and showing the systemic relations in a social process or phenomenon, would "contribute to a better understanding of social life," "provide us with better criteria of decision and action" and "improve our explanations of social reality, and our grasp of the forces regulating social change" (2002: 1). A "good" model would be that which had the power to transform social functioning, and is therefore congruent with the ethos of critical realism, which seeks to improve the quality of life, and views theory as needing to be implemented in practical ways. According to Judd, human beings need concepts to inform everyday social practice (2003: 51), but not necessarily complex abstract concepts. However, as Franck's work suggests, practical models are more likely to guide effective

practice if they are informed by theories which capture the “essence” of social structures and systems in their layered complexity (“essence” is a term also used by Bhaskar in relation to the “way of being” of a thing, 1978: 51-52 or its deep structure, 1979: 16).

Franck defines the characteristics of a theoretical model as follows, to distinguish it from an applied model:

First characteristic: a theoretical model is a formal structure (i.e. without empirical content). Second characteristic: a theoretical model is necessary as regards the explanation of the phenomena observed. Third characteristic: the theoretical model can be generalised. Fourth characteristic: a theoretical model serves as a principle for explanation (2002: 149).

When the “functional architecture” of a system possesses these four characteristics, it constitutes a theoretical model, according to Franck (2002: 150).

2.7.3 Modelling interpreting

According to Pöchhacker, up to now modelling has focused on cognitive processes, and to a lesser extent, interaction. He explains this focus as reflecting the “two supermemes of interpreting”, namely, processing and communication (2004: 85). It must be noted that “processing” in this publication means cognitive information processing, mental processing or conceptual processing, and does not refer to, for example, communicative processes (except perhaps the neural aspects). However, it must be noted that Pöchhacker modifies this position in a subsequent publication to include

a broader definition of process, the “macro-process of social interaction” (2005b: 693).

As an experienced practising interpreter and academic, I must stress that interpreters and lecturers have difficulty in “unpacking” the kinds of models of interpreting found in the literature. A model may need a whole journal article or book chapter to justify its formulation in academic terms, but, if it is not self-explanatory to a large extent, then is not actually useful to the practitioner (i.e. lecturer in Interpreting Studies or the actual interpreter), and could be said to have little “explanatory value” to inform interpreting or teaching practice. When I say “useful”, I do not mean for providing lecture content (“indicative content”, in OBE terms), rather useful in offering insights into the interpreting process, insights which might have the potential to enhance actual practice. The same applies to models of interpreting service delivery: are they useful in informing effective service delivery? And before one is caught in the circular argument of how one assesses “effectiveness”, it is the contention of this study that an evaluation function can be built into a model, either in the sense of participants being self-regulative (a term used by Cuvelier, Du Plessis, Meeuwis, Vandekerckhove & Yperzeele 2010: 23), or by means of feedback from some external agent (e.g. clients, local authorities). One can also partially assess the effectiveness of educational interpreting in terms of the learners’ academic achievement (Verhoef 2010c: 61), although other factors which might impact on performance must also be considered.

It is not the contention of this thesis that any one “way of seeing” or way of modelling (any more than one orientation or philosophy) is better than another. Models are considered to be useful only for their “explanatory power”, with the proviso that the explanation must fit the context and purpose, as well as the audience for which explanation is sought. What is important is to see both the strengths and limitations of different kinds of modelling, not so as to rank them, but to be able to choose whichever model works best in a specific context. The value of systemic models, according to Franck (2002) is their potential for generalisability in diverse social contexts, so as to be applicable in different areas or even different fields. This generalisability is considered to be potentially useful, not only in terms of making other social processes understandable, but also in revealing systemic operations at the core of social functioning, not a “grand theory”, but intricate levels of system upon system: these embody the principle of “stratification” which Bhaskar sees as operating at many different levels (Irwin 1997). A realisation of the systemic operation of social processes offers the option of not only insight into their operation, but greater potential for self-determination as well as the smooth functioning of social groups or societies. This is not to be seen as “social engineering”, but the opportunity for individuals to have more control over their lives, “transforming from below”. Good interpreting practice is on the whole applied intuitively by people who are not academics, although there are universities which cater for the induction into academia, as well as the practical training of interpreters (e.g. the Höger Instituut voor Vertalers en Tolken).

This is because there is a need for highly trained interpreters for contexts such as NATO, UNESCO and the European Commission, interpreters whose practical training is informed by the theoretical insights provided by the universities. In South Africa, however, even in court interpreting, amateur or ad hoc interpreting tends to be the order of the day, with little understanding by authorities as to the standards required for quality performance, for example, proper breaks for interpreters to avoid deterioration in quality caused by fatigue (see Kubheka 2010; 2011a). Abstract theories, or the kinds of models formulated by academics (who themselves are not always practising interpreters) need “interpreting” for non-experts, with a strong risk of being “lost in translation”. Developing a model of interpreting which is accessible to practitioners and clients, as well as to academics, could benefit social practice in societies such as South Africa where most interpreters do not have the option of university training. There is of course nothing wrong with abstract models or continued research into abstract or theoretical areas - this research deals with the nature of models, which is surely itself an abstract concept - but it is the contention of this study that social transformation is achieved through practical application of theory (Bhaskar 1986: 169), which is why systemic modelling, with its combination of theoretical and applied aspects, was adopted as the type of modelling to be used.

2.7.4 Current models of interpreting

Table 2.2 shows some of the models found in the literature, ranging from complex cognitive models with sub-processes, though flow charts, to rule-of-thumb or anecdotal types. The list is not exhaustive, and is intended to

Table 2.2 Current models of interpreting

FORMULATOR/DATE	MODEL	TYPE
Gile (1995)	Effort model	cognitive process
Kalina (2005)	Quality assurance data-sheet on interpreting assignments (for quality assurance in conferences)	data sheet
Verhoef (2008/10)	Quality assurance model for educational interpreting	data sheet
Blaauw (2010)	Model for the training of educational interpreters	exemplar
Anderson (1976)	'Type-case' model of three party interaction	interaction
Wadensjö (1995)	Interactionistic model of communication ⁷	interaction
Gish (1995)	Gish's model	message levels
Pöchhacker (2001)	Quality standards for the product and service of interpreting	parameters indicating quality
Alexieva (1997)	Multi-parameter typology of interpreter-mediated events	parameters indicating type
Tseng (1992)	Model on interpreting as a recognized occupation in society	phases in professionalism
Pöchhacker (2004)	Interactant model of the interpreting situation	positions/roles
Cokely (1984)	Sociolinguistic model of the interpreting process	process
Colonomos (1992)	Interpreting process model	process
Ford (1984)	Model of the interpreting process	process
Gerver (1976)	Model of the simultaneous interpretation process	process
Ingram (1974)	Communication model of the interpreting process	process
Isham (1985)	Model of the interpreting process	process
Kalina (2005)	Model of interpreting conditions and processes	process
Kohn & Kalina (1996)	Bilingual, interpreter-mediated conference communication	process
Moser-Mercer (1978)	Model of the interpreting process	process
Seleskovitch (1978)	Spoken language model of interpreting: 2 stages and mental representation of the message	process
Setton (1999: 65)	Processing model for simultaneous interpretation	process
Napier (n.d.)	Model of Auslan register and discourse types	register/discourse
Blaauw (2010)	Model for the training of educational interpreters	training
Colonomos (1992)	Pedagogical model	training
Roy (2000)	Turn-taking model: a system that organizes speaker change and its	turn-taking

⁷ Wadensjö's (1995) "interactionistic model of communication" was intended to emphasise that interpreting requires an interactive model of communication, and not a conduit model (1995: 113-114)

	recurrence	
Sacks, Schegloff & Jefferson (1974)	Model of turn-taking in face to face interaction	turn-taking
(in Bar-Tzur 1991)	Advocacy (ally) model	type
“ “ “	Bilingual-bicultural model	type
“ “ “	Conduit (machine, transfer) model	type
“ “ “	Helper model	type
“ “ “	“Sore thumb” model	type
(in Mickelson 2008)	Communication facilitator	type
“ “ “	Linguistic model	type

illustrate the variety of models in both complexity and type. Aspects of interpreting included in the models are interpreter training and quality assurance. Not all models are in the form of diagrams, and not all are strictly models in the sense of abstracting common elements. Some are rather exemplars, data sheets or even types of interpreting (Cerney’s “metaphors” 2005: 200). However, exemplars can illustrate exemplary interpreting (or training) practice (Blaauw 2010), and data sheets can offer depth insights into interpreting processes (Kalina 2005; Verhoef 2010c). The “process” models differ greatly in scope and type and include cognitive and discourse processing.

Table 2.3 suggests that process models tend to include aspects such as the following:

- the general incoming source message in the context of the surrounding environment and situation;
- analysis of the message to find the speaker’s intent, goals, surface and underlying ideas, and context implications on the message;
- creation of a mental or conceptual representation of the message, without words or signs; finding equivalents in the target language;
- and production of the equivalents (Devilbiss 1998: 6).

However, as Devilbiss points out, monitoring the outgoing message (i.e. for correction) does not feature so often in process models.

Table 2.3 A comparative table of the models of the interpreting process (Table 1 in Devilbiss 1998: 32-33)

Ingram	Seleskovitch	Moser	Roy	Ford	Isham	Colonomos a	Colonomos b	Cokely
Decode	receiving & analyzing	reception	receive	reception	identify what to relay	reception	concentrating	message reception
			comprehend	decoding		analysis	source frame	prelim. processing
Form Lexicon Syntax Semology		SAM	analyze, identify relationships	changes message				short term message retention
	discard language & keep mental represent.	GAM	discard wording			representation	representing	semantic intent realized
			visualization		search for equivalents	composition	target switch	semantic equivalent determined
			recreation	encoding			planning	syntactic message formulation
Encode	creation - original message & recipient geared	creation	production	transmission	produce	expression		message production
						monitor/feedback		

Sources: (compiled from Cokely, 1992; Colonomos, 1992a, 1992b; Ford, 1982; Ingram, 1974; Isham, 1985; Moser, 1978; Seleskovitch, 1978)

2.7.5 Models of interpreting relevant to this study

Most process models deal with micro-cognitive processing, but some researchers, including Pöschhacker, realise the need “for a broader concept of ‘process’ in interpreting research” (2005b: 682), which is echoed by Kalina (2007: 117). There is clearly a need for wider (i.e. “macro”) models of the

actual interpreting process and not just models of associated cognitive processes. However, as Pöchhaker comments, “the phenomenon is of such complexity as to elude attempts at constructing a comprehensive predictive model” (2004: 85). The model which I used for lecturing purposes over the last ten years, with slight modifications (see Figure 2.5, mentioned earlier in this chapter) is a process model with three phases: planning, process and feedback. This is because it simplifies the interpreting process for the students at undergraduate level. There are problems associated with process models, however, as mentioned above.

Kalina’s “model of interpreting conditions and processes” has four phases (2005: 777-778):

- (1) a **pre-process** phase that includes trained interpreting skills and competences, information retrieval and preparation as well as coordination or cooperation with other members of a team,
- (2) a **peri-process** framework which includes the conditions in which the interpreting act takes place (data on participants, working languages, team composition, possible relay requirements, documents made available in-conference, time schedules, technical equipment),
- (3) **in-process** requirements to be met by interpreters, speakers, listeners, technical staff,
- (4) **post-process** activities.

Kalina’s process model was initially formulated as the basis for a method whereby the quality of simultaneous interpreting (i.e., CI as opposed to NCI) might be assessed (2002; 2005). The four phases identified above were used by Kalina as the framework for a quality assurance data sheet. Kalina’s data sheet was also intended to gather research data on various interpreting assignments.

Table 2.4 Verhoef's "Processes according to which service delivery is organised and the respective associated subsets" (Table 4.3 in Verhoef & du Plessis 2010: 60-61).

Process	Subset
1. Pre-process	1. Pre-process before commencement of institutional service
	1.1 Identification of teaching programmes to be delivered by means of simultaneous interpreting
	1.2 Budgeting process
	1.3 Recruiting and training of appropriately skilled interpreters
	1.3.1 Differentiated ways of recruitment
	1.3.2 Screening for potential
	1.4 Contracting of interpreters and interpreting assistants
	1.5 Liaison with programme owners and lecturers
	1.6 Logistical planning and preparation
	1.6.1 Equipment
	1.6.2 Interpreting timetable
	1.6.2.1 Allocation of equipment to store-rooms according to timetable
	1.6.2.2 Appointment of "best" interpreters/assistants to modules
	1.6.3 Availability of text books and study guides
	1.6.4 Language direction
	2. Pre-process before commencement of individual service
	2.1 Speaker-specific preparation
	2.1.1 Availability of study guides and text books
	2.1.2 Establishing a working relationship and liaison with individual lecturers
	2.1.3 Establishing a working relationship between interpreters and interpreting assistants
Process	Subset
2. Peri-process	2.1 Logistics regarding punctuality and availability of equipment according to timetable allocation
	2.2 Equipment test run and selection of channels
	2.3 Immediate logistics
	2.3.1 Distribution of headsets
	2.3.2 Classroom
	* Attendance register: end-users
	* Attendance register: interpreter and assistant
	2.4 In-service co-ordination between interpreter and interpreting assistant
Process	Subset
3. In-process	3.1 Team profile (technical/non-technical interpreter) subject specialist; non-subject specialist assistant
	3.2 Lecturing style of source text speaker
	3.3 Language facilitation providing for student participation
	3.6 Interaction (verbal/non-verbal) and feedback between communication partners i.e. lecturers/end-users/non-users/ interpreters
	3.7 Quality assurance of service delivery
	3.7.1 Recording of interpreting according to set schedule

Process	Subset
4.Post process	4.1 Immediately after service delivery Post-process logistics
	4.1.1 Handing in headsets
	4.1.2 Cleaning of equipment
	4.1.3 Returning of equipment to storeroom and loading of batteries
	4.2 Once a week
	4.2.1 Administration
	* Attendance register of end-users
	* Attendance register of interpreters/assistants as well as claim forms
	4.2.2 In-service training of interpreters (40 hours per annum)
	4.3 Once a month
	4.3.1 Administration and submission of individual claims on the basis of hours of service delivery
	4.4 Once a quarter
	4.4.1 Quality assurance discussions with interpreters based on assessment of recordings
	4.4.2 Service of equipment – charging and recharging of batteries
	4.5 Once a semester
	4.5.1 Data-collection of perceptions of end-users
	4.5.2 Focus-group discussions with representative of number of end-users
	4.5.3 Formal feedback on progress to line managers
	4.5.4 Updating of glossaries
	4.5.5 Reporting on the correlation between academic performance of end users and their attendance, in relation to those who did not use the academic interpreting service

Kalina comments: “As presented here [i.e. 2005: 779-781], the data sheet is a very rough tool; *it can be refined and adapted* depending on which component of the overall process is to be analysed in detail” (2005: 779, my emphasis). She adds, in conclusion: “in an adapted form, such an approach might also serve as a tool for quality assurance applicable to other types of interpreting” (2005: 781). Kalina shows in a later article how her model can be applied in the classroom to train interpreters (2007: 113).

Verhoef has adapted Kalina’s process model to formulate a model of the “Processes according to which service delivery is organised”, comprising a data sheet to assist with quality management of interpreting in the classroom

situation (see Table 2.4, which is Table 4.3 in Verhoef 2010: 60-61). It is reproduced here to show how the model of interpreting service delivery developed in this account contains common elements of interpreting to those found in the literature, but in a very different configuration (as will be shown in the course of this thesis).

Table 2.5 Elements listed in Table 2.4 which have resonances with the model developed in this study

No of entries	Elements involved with...
2	...contextualising the interpreting process
6	...resourcing the interpreting process
3	...the interpreting process itself
28	...organising the interpreting process
8	...regulating the interpreting process

Of the table entries in the sub-sets in Table 2.4, it was interesting to note in retrospect how many elements corresponded with the functions contained in the eventual model of interpreting service delivery developed in this study. These correspondences are shown in Table 2.5. One aspect which is not emphasised in Verhoef's "processes" is the presence of elements associated with the "sanctioning" function, that is the authorising of the interpreting service by government and institutional language policies, management buy-in and participant concurrence (see Table 4.2 on p119). This is presumably because

the service was already authorised by the NWU's Language Policy and the fact that it was being implemented by a Language Directorate.

It must be emphasised that the “model of essential functions” developed in this research was initially formulated, not from the literature, but from my own experience as a practising researcher and my efforts to implement an educational interpreting service at DUT. This was because no examples of systemic models (i.e. of essential functions) of interpreting service delivery were in fact available at the time (nor are they currently, apart from the one described in this thesis). However, Verhoef's “processes” did play a part in refining the model developed here. When the literature was revisited from the context of hindsight (i.e. after the prototype model had been formulated), the strong presence of organisational elements in Verhoef's data sheet (see Table 2.5) suggested the inclusion of “organising” as a fifth essential function “without which” the mechanism of interpreting service delivery could not take place.

2.8 Models of interpreting service delivery

While providing an interpreting service is frequently referred to as “interpreting service delivery”, in my opinion the notion that interpreting is essentially a service is not emphasised sufficiently in the literature, yet there are frequent references to “service” (Cuvelier, Du Plessis, Meeuwis, Vandekerckhove & Webb 2010; Mostert 2010; Verhoef 2010c), and Pöchhacker refers to it as a service when defining the nature of translation/interpreting (2004: 11-12). My emphasis on the service delivery aspect can be attributed to the difficulties

experienced in actually implementing an interpreting service at DUT. A survey of literature in this area will suggest that large numbers of “interpreting service delivery models” are already available for implementation. However, on closer study they fall short of providing generalisable models of the kind sought for implementation in other contexts. There are a number of excellent detailed case-study type models in the literature, notably in the health interpreting sector (Bowen 2001; Angelelli 2004; Health Canada 2006; Shahsiah & Grégoire 2006). However, these detailed accounts are too context-specific, either to the field (e.g. Healthcare) or the location (e.g. Canada) to be generalisable. At the other end of the scale, one finds almost anecdotal accounts of interpreting service models, for example, the Helper model, Conduit/machine model, Communication facilitator model, Bilingual bi-cultural mediator model, the Ally model, and even a “Sore thumb” model (Bar-Tzur 1999). The latter are more in the nature of exemplars showing how interpreting can be applied rather than true models. One can also find business-type process models for interpreting services (similar to Kalina's 2005 model), as in Potter and Sakry's CMMI Services model (n.d.)

The issue of service delivery in general (i.e. and not just for interpreting) is a crucial one both internationally and locally. In the Preface of McDonald and Pape's book on *Cost recovery and the crisis of service delivery in South Africa*, Professor Dennis Brutus is quoted as saying: “At present millions of South Africans face severe problems in accessing even the most basic services: water, sanitation, electricity, and refuse removal” (2002: viii). Ahmad, Devarajan, Khemani and Shah (2005) provide a report on attempts

to improve service delivery worldwide through decentralization, in which over 75 countries, including South Africa, have engaged. Khumalo, Rapoo and Ntlokonkulu (2003) report on alternative forms of service delivery at local government level in South Africa. Public protests and increasingly violent demonstrations against poor service delivery have recently featured in the South African media (Kubheka 2011b).

LEVELS OF MODELLING

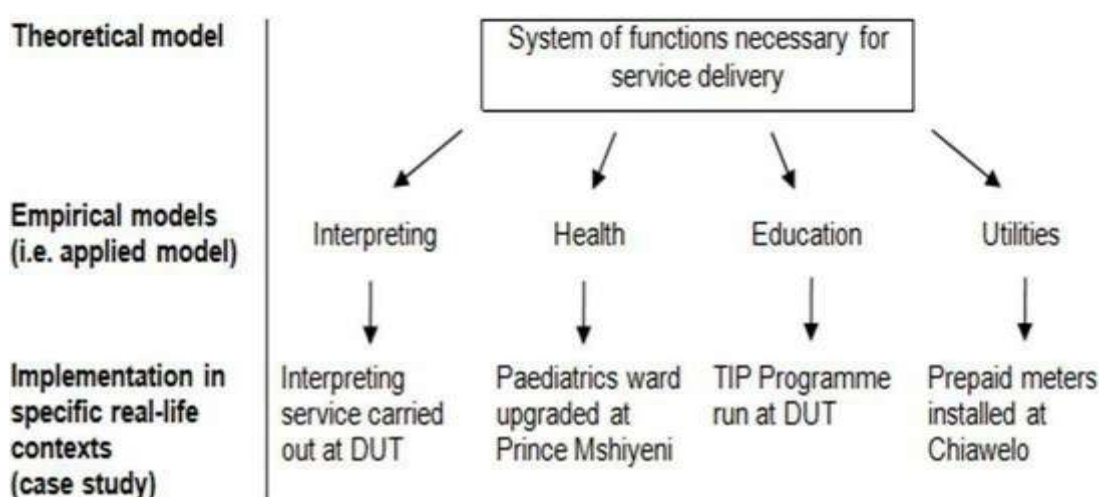


Figure 2.6 Levels of modelling found in models of interpreting and service delivery in general

While, as in the interpreting service delivery sector, detailed reports and case studies have been compiled on the subject, there is little or nothing which is applicable in terms of generalised models of service delivery. As illustrated in Figure 2.6, the models of interpreting and service delivery (including interpreting services) in the literature are situated at different levels, ranging

from true theoretical models, through applied models, to literal descriptions which are little more than exemplars or case studies, and not models at all (i.e. with little or no abstraction involved). It is the contention of this study that it would benefit not only DUT and other multilingual universities but go some way towards addressing the crisis of service delivery in other sectors if a generalisable model of service delivery could be developed. A systemic model which clearly identified the functions necessary for service delivery might perform this much needed deficit.

To this end, the following specific research objectives were formulated:

Specific research objectives

1. to develop a socially-based model of interpreting services which:
 - a. describes the common factors involved, and
 - b. makes provision for specific application in different contexts.
2. to show how this model could be applied at DUT to address specific interpreting requirements.

2.9 Conclusion

It can be seen from this chapter that the multilingual situation at DUT is not only different from those at overseas universities, but also from other universities in South Africa, so that both overseas and local models, as well as research data, need to be reconsidered in this unique configuration. It was suggested that transforming the higher-education system at DUT by moving towards multilingualism involved not only classroom interpreting but also

interpreting (and translation) in a number of diverse contexts within the university setting. And while models of both interpreting and interpreting service delivery can be found in the literature, it was seen that these are, on the whole, too context bound and not generalisable enough for application in different contexts. The processes listed by Verhoef (2010: 60-61) using Kalina's (2005) process framework were shown to have some resonances with aspects of the model of service delivery formulated in this study. However, it was suggested that process models, while assisting practical implementation of interpreting, tend to be surface descriptions lacking a theoretical underpinning. The chapter ended with the specific research objectives involved in developing a generalisable systems model of interpreting service delivery which, it is hoped, might have relevance not only for interpreting in various contexts, but for service delivery in general

CHAPTER 3: RESEARCH ORIENTATION AND METHODOLOGY

3.1 Introduction

This chapter first looks at the meaning of terms such as paradigm, theory and model, and explains how they are used in this account. It next describes the research orientation and methodology used for this study, that is, the critical realist philosophy, and the rationale for choosing this approach. The chapter then describes the rationale for and stages of Franck's (2002) modelling process, and shows how these stages will be unfolded in subsequent chapters

3.2 Paradigms, theories and models

In chapter 2 (2.7.1) the relationship between theory and models was touched on. It was also emphasised (2.7.3) that no one "way of seeing" - whether model or orientation - was considered to be better than another. It is necessary in research, however, to identify one's orientation or research approach, as well as one's conceptualising of key terms, so that the work can both be understood and assessed in terms of the frame of reference in which it is set. The terms "paradigm", "theory" and "model" are used frequently in the literature on interpreting and interpreting research, often with a very different force, scope and meaning from each other, and from that used in this account.

3.2.1 Paradigms

A close reading of Kuhn (1962; 1969) reveals that he uses the term paradigm with three different meanings:

- Comprehensive world view, meaning: "... the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" (Kuhn 1962:175). Examples would be positivism, constructivism, critical realism.
- Disciplinary matrix, meaning: "... the common possession of the practitioners of a particular discipline" (Kuhn 1969:182). Examples would be seminal works in the field, typical concepts (i.e. Pochhacker's "memes", 2004: 60 ff.)
- Exemplar, meaning: "shared examples" (Kuhn 1969: 187) typical of the field. Examples would be shared rubrics, formulae and problem solving techniques.

Except when citing authors who use the term differently, the term paradigm is used in this account with the meaning of "comprehensive world view", and not just a new idea or new approach to a topic of field. As Guba and Lincoln suggest:

A paradigm may be viewed as a basic set of *basic beliefs* (or metaphysics) that deals with ultimates or first principles. It represents a *worldview* that defines, for its holder, the nature of the "world," the individual's place in it, and the range of possible relationships to that world and its parts, as, for example, cosmologies and theologies do (1994:107).

According to Guba, paradigms can guide our actions in different walks of life, such as law, religion or sport (1990:18). Paradigms can be compared to metaphors for thinking about everyday ideas: “The metaphors are ‘lenses’ which enable people to rethink and to give coherence to daily events that before seemed incomprehensible or troubling” (Popkewitz 1984:7). As paradigms describe the ways in which we view reality, according to Guba, they are incontrovertible, as no one way of viewing reality can be considered superior to or “closer to the truth” than any other (1990:27). One’s research approach or orientation, for example, might be termed a “paradigm”, but for the work to be internally consistent, researchers need to adopt a position congruent with their own view of reality.

In the sense of world view, critical realism could be described as a new paradigm (i.e. orientation) for researching interpreting. A complication is that critical realism is in fact *not* a paradigm per se, but a philosophy, developed mainly by Roy Bhaskar (1978; 1979; 1986; 1989; 1994). It is not then a paradigm in the sense described in Habermas’s paradigms of knowledge construction, underpinned by various “knowledge-constitutive interests” arising in society in various periods of western civilisation (1972: 196-197).

3.2.2 Theories

It is agreed in general that “a model is an assumption about what something is like and how it functions, so that the model can be regarded as a particular form of theoretical endeavour” (Pöchhacker 2004: 84). However, the term

“theoretical model” as used in this account requires a definition which fits in with the process of systemic modelling, as follows:

A theory is defined as a hypothesis about the formal conceptual structure of a natural or social system, which attempts to abstract the necessary principles without which the properties of the system could not be fulfilled. A theory is generally judged in terms of its clarity in explaining phenomena with a particular end or purpose in view (Pratt 2007: iii).

To follow further on aspects of theory which complement the modelling process used here:

Theoretical explanation consists in explaining observed phenomena not by means of the material structure of the process which generates them (i.e., by their causes), but by means of the formal structure of that process (2002:234).

A “theoretical model”, then, is one which describes the system of functions or formal architecture of a social mechanism.

3.2.4 Models

As mentioned before, Franck’s (2002) modelling process is designed to identify the formal and applied aspects of social mechanisms. The theoretical aspect of a model, in these terms, does not lie in the elegance of the description, the wealth of detail (or complexity), or the identification of the material causality of the social process: it lies in the systemic relations which underpin the material functioning of the process. This means that a model may refer to highly complex theories, for example, those related to cognitive or neural functioning, and yet not have a theoretical (i.e. formal) component in its description of the process. The kinds of models developed in this account

need to be more than metaphors, exemplars, cases studies, lists of various elements, processes, or even conceptual schematics of causal relations: they need to contain a formal (i.e. abstract) systemic aspect as well as material causes or relations.

This is not to devalue the usefulness of the practical or applied aspect of a social mechanism. Widdowson postulated the concept of a model of language use which would be accessible to the language user, which he saw as being preferable to pure linguistic models (i.e. in the context of actual language learning): “We are concerned with language as the rightful property of language users, not as the special preserve of the linguist” (Widdowson 1984: 27). A “user’s model” would be “consumer based” (Widdowson 1984: 26), that is it would provide an explanation accessible to service providers and clients, as is the intention of the models formulated in this thesis. There is of course nothing wrong with abstract models or continued research into abstract or theoretical areas - this research deals with the nature of models, which is surely itself an abstract concept - but it is the contention of this study that social transformation is achieved through practical application of theory (Bhaskar 1986:169), which is why systemic modelling, with its combination of theoretical and applied aspects, was adopted as the type of modelling to be used.

3.3 The critical realist orientation

The critical realist philosophy is attributed mainly to Roy Bhaskar (1978; 1979; 1986; 1989; 1994). However, the contributions of Rom Harre (1979;

1986) and Margaret Archer (1998; 1998; 2002) should also be noted; Lemert (2002) comments on Archer's impressive publication record, starting before what is considered to be critical realism's seminal work, Bhaskar's *A Realist Theory of Science* (1978). There are therefore variations in the interpretation of critical realism, and members of the *Bhaskar Mailing List* regularly engage in robust debate. Critical realism is in a constant state of change and development: the name of the orientation has changed from "transcendental realism" to "critical naturalism" and then to "critical realism". Even Bhaskar admits that his own position may change with time (Norris 1999).

Bhaskar's most significant contribution to philosophy has been in the area of ontology. As he says in his interview with Alan Norris:

A Realist Theory of Science re-thematised ontology, argued for its necessity and irreducibility in any account of science, and gave it a radically different shape or context. In particular, it argued against the epistemic fallacy, that is the idea that one can reduce or analyse knowledge in terms of being. It was argued that being was an absolutely irreducible and necessary category (Norris 1999).

Of the importance of ontology, Bhaskar says (in the same interview):

You can't get away without ontology. It's not a question of being a realist, or not a realist. It is a question of what kind of realist you are going to be - explicit or tacit. Insofar as you are not a realist, you secrete an ontology and a realism... You can't get far in the world unless you are implicitly realist in practice (Norris 1999).

Following Guba's (1990: 18) framework for categorising orientations, Pratt (2011: 20) gives the following overview of critical realism:

Ontology: critical realist - comprising three different domains (real, actual and empirical), the “real” being independent of human thought, which, mirroring the structure of the “real”, can approximate but never fully apprehend it, the “actual” being the realm of human experience, and the “empirical” being the realm of thought, that is the speculations of humans on the nature of the real.

Epistemology: transcendental, dualist - where the inquirer is both part of the reality and partakes of its qualities but attempts at the same time to transcend the limitations of human knowledge and approximate the truth.

Methodology: dialogic critique - a depth-investigation into causality, that is the complex layers of mechanisms triggering events.

While critical realism postulates an external reality, it is anti-positivist, and views reality as more than accumulated sense data. According to Bhaskar, reality is complex, layered and dynamic. His realist ontology is shown in Table 3.1, consisting of three complex layers of being, or “domains”: the Domain of Real, the Domain of Actual and the Domain of Empirical⁸.

Table 3.1 Bhaskar’s ontology as represented by the domains (Table 1.1 from Bhaskar 1978:56)

	Domain of Real	Domain of Actual	Domain of Empirical
Mechanisms	✓		
Events	✓	✓	
Experiences	✓	✓	✓

⁸ In Bhaskar’s ontology, the term “empirical” refers to the realm of thought and remembered experiences, while in Franck’s modelling process, “empirical” refers to the practical or applied aspect of a model, i.e. based in experience.

As in the overview given above, the “real” is independent of human thought; while human consciousness reflects the nature of the real (being part of it), and can “approximate but never fully apprehend it”. The “actual” is “the realm of human experience”, and the “empirical”, “the realm of thought”, or “the speculations of humans on the nature of the real”.

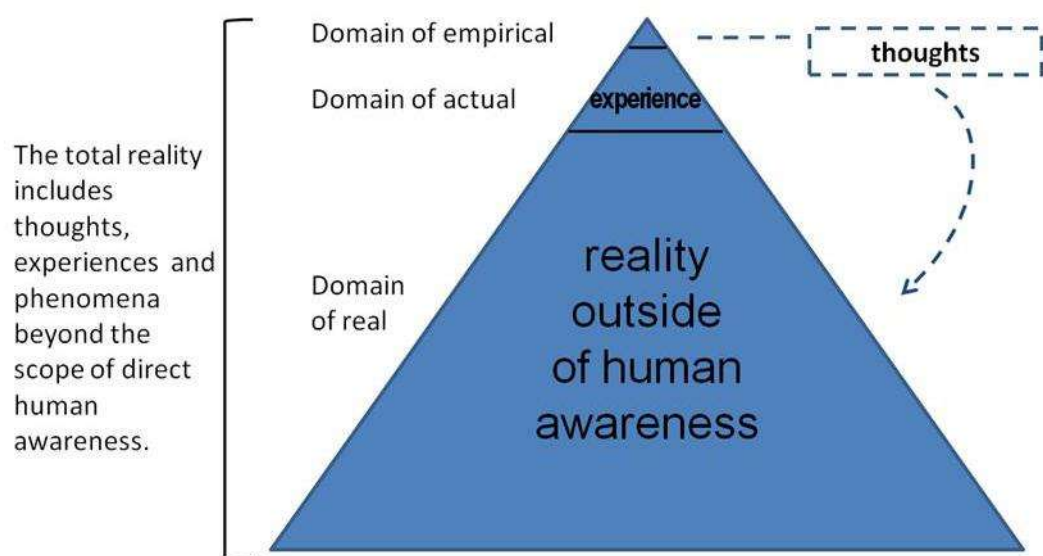


Figure 3.1 Diagonal perspective of Bhaskar’s ontology

The Domain of Real comprises mechanisms, events and experiences, the Domain of Actual, events and experiences, and the Domain of Empirical experiences only (i.e. recorded memory and our reflections on events). Figure 3.1 provides a different perspective on Bhaskar’s ontology, one which shows that the total reality comprises thoughts, experiences and all other phenomena, but that human thoughts and our experience of events constitute a very small part of the total reality. Aspects of the wider reality

outside of human experience can be grasped, however, by transcendental “leaps” based on human thought and experience.

Bhaskar categorises the Domain of Real as “intransitive” (1978: 17), that is independent of human thought. It contains the mechanisms which generate events; the experiences which occur as a result of these events are also “real”, but there are aspects of our experiences of which we are not consciously aware. It must not be thought that the Domain of Real is necessarily a world of solid objects: it encapsulates within itself human consciousness as a “real” phenomenon (see Figure 3.1). Fleetwood (2005: 2-3) has identified various categories of “real”:

- materially real: material objects
- ideally real: conceptual entities with causal force
- artefactually real: constructed artefacts or syntheses
- socially real: social structures and/or practices

The Domain of Real contains complex layers of mechanisms which give rise to events (also contained in this domain). They are not only of the “cause and effect” variety, however, but more like a blueprint which gives the specifications for various phenomena (e.g. DNA, weather systems). Bhaskar refers to mechanisms as the “essence” of things: “For a generative mechanism is nothing other than a way of acting of a thing. It endures, and under appropriate circumstances is exercised, as long as the properties that account for it persist” (1978: 51). Reality is dynamic, however, complex and changing, unlike the static world of most positivist descriptions. Critical realist

researchers are involved in deep-level inquiries into various kinds of causality, although Bhaskar does not specify any particular research methodology, and his description of mechanisms tends to emphasise what Franck (2002) would term the formal aspect of mechanisms, and not the applied aspect, which makes it difficult to see how mechanisms can be identified as operating in real-world situations. While mechanisms are not subject to human control, human thinking and actions are obviously a component of the real, and beliefs and actions can be powerful mechanisms prompting events (Morén & Blom 2003; Fleetwood 2005).

However, Bhaskar also does not specify how human agency operates in all this, although Archer has focused on this area (Archer 1998; 2002; Lemert 2002). Archer represents humans as having “the properties and power to monitor their own lives, to mediate structural and cultural properties of society, and thus to contribute to social reproduction or transformation” (2002: 19). Bhaskar’s transformational model of social activity (see Table 3.2) shows how human agency works to both reproduce and transform social structures. Social systems that involve human agency, such as communication, could be termed as having “intentional” rather than “contingent” causality:

Terms such as “generate”, “give rise to” and “produce” have been used in the sources cited above to describe the effects of mechanisms. But can one equate such forms of production with both sentient intentionality (e.g. writing a novel) on the one hand and insensate contingency (e.g. the formation of a cyclone) on the other? Some form of distinction appears to be required. Granted that people do not always act with conscious intent, and much – most, in fact – of what we communicate is involuntary, sentient behaviour would appear to require more than instrumental causality (Pratt 2011: 49-50).

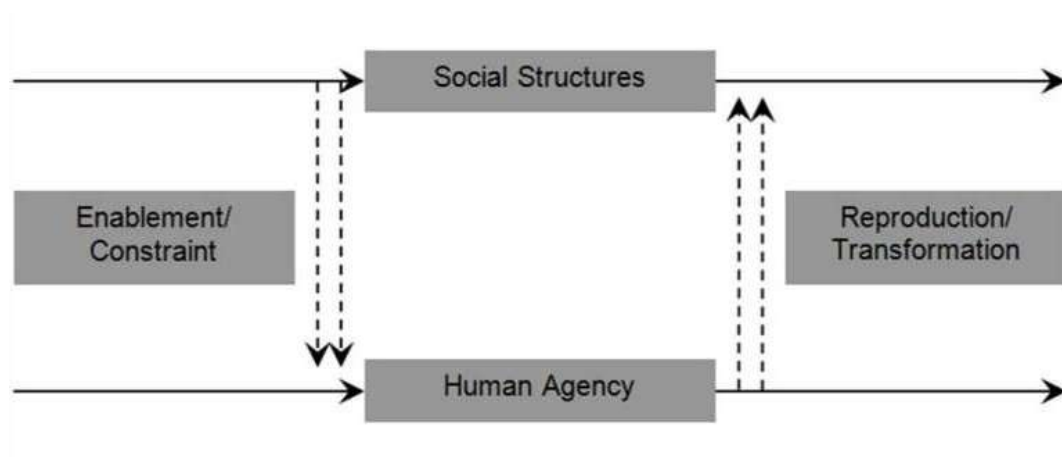


Figure 3.2 Bhaskar's transformational model of social activity (Bhaskar 1994: 42)

The Domain of Actual comprises both events and human experience, or perhaps one should say human experience of events, which is incomplete and often confused. The Domain of Empirical would contain our thoughts, including theories about various phenomena. The Domain of Empirical is considered to be transitive: while thinking has a “real” existence (which is why “experience” is listed as being in the Domain of Real), thought does not, even if *what* we are thinking about (and the *act* of thinking) does.

As related to inquiry in the field of interpreting, Bhaskar's domains would appear as shown in Table 3.2. The Domain of Empirical, comprising Service “providers’ and clients’ experiences” would also contain the various theories - including models - of interpreting.

Table 3.2 Bhaskar's domains as related to the field of interpreting

	Domain of Real	Domain of Actual	Domain of Empirical
Mechanisms	Systems involved in generating interpreting events		
Events	Various real-world instances of interpreting	Various real-world instances of interpreting	
Experiences	Service providers' and clients' experiences	Service providers' and clients' experiences	Service providers' and clients' experiences

Mingers (2004) comments that Bhaskar's critical realism holds a realist ontology and social-constructivist epistemology: there is a "real" world (not necessarily composed of matter) that exists whether we perceive it or not. As is depicted in Bhaskar's ontology (Table 3.1), he argues that there are three domains, which may be conceptually separated, namely, the causally operative structures or systems, causal laws or mechanisms; the events they generate; and those events that are empirically observed. Mingers points out that these three domains sound very similar to three notions described by the philosopher Dooyeweerd: "law side" (for Domain of Real), "subject side" (for Domain of Actual) and the "knowledge-functioning" (for Domain of empirical) which makes us aware of them. However, critical realism over-emphasises the analytic aspect when describing reality. Mingers suggests that Dooyeweerd would disagree with the critical realist notion of an "infinity of events that do actually occur but are never empirically observed". This is because Dooyeweerd would comment that some things are

“continuous rather than countable” and so cannot be called an “infinity of events”, as they are not discrete objects or happenings. Mingers also sees a problem with exactly how causal laws might operate in different physical, social or conceptual contexts. This objection, is, however, answered to some extent by Fleetwood’s (2005) categorising of different types of “real”. These real entities, whether physical, social or mental, would have tendencies to act in various ways to generate events.

3.4 Implications of critical realism for research methodology

Dobson (2002), working in the context of research into information systems, discusses how critical realists would approach research. He comments, firstly, that the researcher cannot concentrate solely on a single level of investigation of the society, group or individual, and that critical realism argues for a “relational perspective”. This could well be applied to the modelling of various aspects of interpreting, which occur at many different levels (see Pöchhacker 2004: 85). Next, he points out that “the object of research” (i.e. ontology) is not independent of the research method (i.e. methodology). Dobson cites Archer in support of this:

...the social ontology endorsed does play a powerful regulatory role vis-à-vis the explanatory methodology for the basic reason that it conceptualises social reality in certain terms. Thus identifying what there is to be explained and also ruling out explanations in terms of entities or properties which are deemed non-existent. Conversely, regulation is mutual, for what is held to exist cannot remain immune from what is really, actually or factually found to be the case. Such consistency is a general requirement and it usually requires two-way adjustment (Archer 1995: 17).

However, Bhaskar's philosophy leaves it up to researchers in various fields to work out a methodology which will not only be congruent with the critical realist ontology, but also fit in with the specialist area of the discipline and the intended outcome of the investigation. As Yeung points out:

...while philosophy can contribute much to ontological and epistemological debates, it is still up to each substantive social science (e.g., economics or geography) to discover empirically grounded theories and, in the process of doing so, to set up their distinctive methodological apparatus (1997: 53).

This study uses Franck's (2002) modelling process as the methodology for formulating a model of interpreting services for implementation at DUT. This is because the process described by Franck both complements and augments Bhaskar's philosophy in giving specifics of the formal and applied aspects of social mechanisms, as well as a method for formulating both aspects. The formal or theoretical aspect of the model is "grounded", as Yeung suggests, by means of the practical application and testing out of the empirical (or applied) model, as will be described below.

3.5 Why the critical realist orientation is appropriate for this study

This study deals with the formulation of a model of interpreting services suitable for a multicultural University of Technology in order to cater for urgent educational needs as well as the promotion - long term - of multilingualism. Critical realism is an appropriate orientation for this study, as the critical realist philosophy works towards transformation through understanding the nature of social processes and designing interventions which will improve the workings

of these processes, and, therefore, the quality of life (Bhaskar 1989: 178), with the proviso that “quality” is relative to the group or individual concerned. The contention of this study is that an understanding of the system(s) underpinning service delivery, and, in particular, interpreting service delivery, will have the potential to make this service more effective to all stakeholders. It may also uncover some basics of service delivery which might be applicable in other key fields, such as Health and Education.

Most previous and current research into interpreting was carried out within the postmodern perspective, focusing on the nature of interpreting as discourse (Roy 2000; Wallmach 2002; Napier 2004). This was valuable in highlighting the social nature of interpreting, and how it was shaped by its social context: such insights into the interpreting process are clearly prerequisites for effective service delivery in this area. However, most of this research has not added materially to the concept of how interpreting service delivery might actually be provided. In this sense, interpreting is in the nature of a social service, and it is not only the process of interpreting itself which is an issue, but the provision of this facility in various social contexts where it is seen to be needed. South Africa is a multicultural and multilingual country, newly liberated, yet still with inequalities of access to education and economic empowerment more than ten year after liberation. Issues like the medium of instruction in schools and universities, and access to meaning, for example, in court, politics and business, are critical for equity of access. In many cases, for equity of access, effective interpreting service delivery is essential. Service delivery as a whole

in itself still needs development in South Africa because of the lack of human and infrastructural resources.

Within this national framework, many educational institutions lack the human and infrastructural resources to deliver quality education. DUT is a merged institution with a multicultural and multilingual staff and student body. Although the medium of instruction at DUT is English, approximately 70% of the students, as well as at least 25% of the staff are not English first language speakers. While, admittedly, these staff are mainly in the administrative areas and not involved in lecturing, the multilingual situation can cause problems with communicating in administrative areas, particularly when staff members may be reluctant to admit to any language difficulties. Some academic staff members, too, are not entirely fluent in English, and would prefer to interact mainly in their first language. It can thus be seen that interpreting service delivery at DUT would facilitate access to quality tuition for the majority of students as well as improve the quality of communication for a good number of staff members.

3.6 Franck's (2002) modelling process

Franck's description of the modelling process (Franck 2002: 295) reveals that it is similar to the retroductive methodology used in critical realist research, as it starts by observing the phenomenon in the domain of actual, hypothesises the real mechanisms bringing about events, and shows the existence of these mechanisms in various social contexts (Pratt 2011; Sanghera 2005). According to Wad (2001: 4), however, retroduction

constitutes a weak argument as it cannot “validate the explanation empirically”. Franck’s modelling process uses a method of classical induction which provides a stronger argument than retroduction. Classical induction is a process “whereby a general principle or theory is inferred from a set of experiences” (Pratt 2011:207). Franck’s modelling process involves two kinds of models, an empirical (or practical) model and a theoretical model. This means that hypotheses can be tested more rigorously against actual data (see Pratt 2011:45).

Franck summarises the modelling process as follows:

(1) Beginning with the systematic observation of certain properties of a given social system, (2) we infer the formal (conceptual) structure which is implied by those properties. (3) This formal structure, in turn, guides our study of the social mechanism which generates the observed properties. (4) The mechanism, once identified, either confirms the advanced formal structure, or indicates that we need to revise it (2002:295).

This results in two different models, a theoretical model and an empirical model, representing the formal and applied aspects of the social mechanism respectively. The way in which the theoretical and practical aspects of a social phenomenon is used to arrive at insights into the social mechanism involved is very similar to that used in Grounded Theory Methodology (Strauss & Corbin 1994; 1999). But, as Pratt points out:

...Franck’s explication of the modelling process provides a rigorous theoretical framework illustrating more precisely the ways in which theory and data interact to develop a theoretical model. The theoretical model is still, of course, only a hypothesis, and its source is in fact irrelevant (2002:252), but the type of theoretical model described by Franck is not just an ad hoc abstraction loosely connected with real events, but the systematic representation of linked groups of social

functions which can be shown to “fit” the social system they underpin by being essential to bring about its properties. Such a systematic representation, or architecture of functions (2002:88), can then act as a lens focusing the researcher on the nature and type of the actual mechanism which carries out the functions, and leads to the construction of an empirical model which can be tested out in specific cases, either validating the conceptual model or suggesting further modifications (2007: 65).

Franck’s modelling process can be broken down into the following steps or stages:

1. The **properties** of a social system are carefully observed and defined.
2. A **theoretical model** is formulated on the basis of the functions needed to achieve the above properties: the model consists of an “architecture of functions”.
3. The **mechanism** which achieves the system’s properties is inferred from applying the theoretical model to real-life situations or data.
4. An **empirical model** is formulated, depicting the operating of the mechanism in a real-life situation.
5. The empirical model is then **tested** in a real-life situation or against data, to see whether it actually generates the properties of the system.
6. The theoretical model is **validated** by being tested against the empirical model, to see whether the theoretical model needs adjustment to fit the real-life functioning of the social system.
7. If the theoretical model, that is the system of functions, is seen to be generalisable so as to explain the properties of a process in another discipline or field, it can be said to have the force of a **principle** (Pratt 2011: 46-47).

This kind of modelling, using reverse engineering or classical induction, has been used in the social sciences to model social systems in various disciplines, including archaeology, demography, economy, engineering, geography, comparative politics, experimental psychology, sociology and the

philosophy of science (Franck 2002). It has also been used in the area of communication to model composing processes (Pratt 2011). In this study it is used to develop a model of interpreting services in the discipline of Language Practice. However, the theoretical model developed (stage 2) is thought to have significance for social service delivery in general, as will be discussed later (see 5.3.3).

3.7 The advantages of using a model of functions

As mentioned earlier, a model identifying the functions required for a social practice to occur and the mechanism(s) whereby this practice is effected is an advance on the models of interpreting service identified so far, which have described ad hoc applications in specific contexts. This is because a model of functions provides more than just a description of a social service. Firstly, it provides the means whereby this social service can be carried out (Mironesco 2002: 181; McCarty 2003: 3). It thus has the potential for improving service delivery. Next, a model of functions makes it possible to see whether the model is generalisable, that is whether it can be applied in other contexts, in particular, in other types of service delivery in. Its basic formal structure may even be applicable in other areas or disciplines.

That which is theoretical in a social mechanism is its functional architecture, not its causal architecture. When attributing theoretical value to the combination of causes and effects which is operative in a given social mechanism, one encounters an insoluble difficulty: one would like to be able to attribute to a particular combination of causes and effects the general (if not universal) applicability which we expect from a theory. But everyone realizes this is impossible. *A combination of functions, on the other hand, can be generalised* (Franck 2002: 2, my emphasis).

As Franck points out, generalisability means that researchers can test out the same principle in a different discipline, area or field (2002: 297). Models with a “functional architecture” have the force of explanations in the natural sciences: “The explanatory power of a theoretical model constructed in this way can equal the explanatory power of natural laws” (2002: 298).

3.8 How the modelling process will be unfolded in following chapters

This is how the modelling process will be unfolded in the following chapters of the thesis:

Chapter 4, involving the first part of the empirical work, uses the data gathered during visits to various universities as follows:

- to clarify the social phenomenon involved in the provision of interpreting services (which was started in Chapter 2, Literature review), thus establishing the properties of the social system (Stage 1);
- to develop a theoretical model of interpreting services (i.e. system of functions, Stage 2);
- to identify the social mechanism involved in providing interpreting services by seeing how functions are carried out in real-life situations (Stage 3);
- to develop an empirical model of interpreting services provision in order to show how this is carried out in real-life situations (Stage 4).

Chapter 5, involving the second part of the empirical work, continues the course of the modelling process, as follows:

- by applying the empirical model of interpreting services in a university context (i.e. try out the empirical model to see if it actually achieves provision of interpreting services) (Stage 5).
- by checking the theoretical model to ensure that it fits the real-life functioning of provision of interpreting services, adjusting it if necessary, thus validating it in the process (Stage 6).
- by seeing whether the theoretical model has possible application for service delivery in other areas of social life (Stage 7).

3.9 Conclusion

This chapter first explained how the terms “paradigm”, “theory” and “model” were to be used in this study, clarifying in what way they might differ from general use in the field of interpreting. It then focused on the research orientation, critical realism. The reason for choosing the critical realist approach to deal with formulating a model of interpreting services was explained in terms of Bhaskar’s approach, which emphasises the need for practical application of theory to improve the quality of life. The chapter then dealt with the research methodology, based on Franck’s modelling process. To sum up, Franck’s modelling process was seen as appropriate to the development of a model of interpreting services as his “architecture of functions” shows the essential functions which need to be carried out for interpreting services to take place. The resulting model, then, is not just a

descriptive model (i.e. a model *of*) but a prescriptive model (a model *how to*) (McCarty 2003: 3). The theoretical model describes the functions which must be carried out, while the empirical (or “applied”) model show the means whereby they can be carried out. The theoretical model of functions and the empirical model of activities are then part of the same mechanism which carries out the social practice of interpreting services. The explication of this mechanism made it possible not only to introduce interpreting services at the DUT, but to suggest a model for application at other universities. The chapter ended with an account of the way in which the modelling process would be unfolded in subsequent chapters.

CHAPTER 4: DEVELOPMENT OF THE INTERPRETING SERVICES MODEL

4.1 Introduction

This chapter will show how, in an attempt to define the properties of the system, visits to various universities were carried out in order to observe interpreting services in action in different social contexts. It was thought that this would enable the researcher to arrive at the system of functions needed for interpreting services to take place. In this chapter salient factors emerging from the visits will be identified, revealing the social mechanism involved in interpreting service delivery. After a discussion of the key factors of this mechanism, a theoretical model of interpreting service delivery will be presented, followed by the description of an empirical or applied model of interpreting service delivery.

4.2 How the stages of the modelling process will be dealt with

In this chapter, the following stages of the modelling process will be dealt with:

1. The **properties** of a social system are carefully observed and defined.
2. A **theoretical model** is formulated on the basis of the functions needed to achieve the above properties: the model consists of an “architecture of functions”.

3. The **mechanism** which achieves the system's properties is inferred from applying the theoretical model to real-life situations or data.
4. An **empirical model** is formulated, depicting the operating of the mechanism in a real-life situation.

As mentioned previously, the “properties of a social system” refer to the social phenomenon itself, that is, what provision of interpreting services actually constitutes in real-life situations. The “theoretical model” refers to the functions which need to be carried out to achieve the provision of interpreting services, that is, they are the functions “without which” it would not happen (Franck 2002: 6). The “mechanism” refers to the means whereby the process of interpreting service delivery is carried out: it has a formal aspect, and an applied aspect. The formal aspect is the underlying “system of functions” (or theoretical model) which shows *what has to be done* for interpreting service delivery to take place. The applied aspect is *the means whereby it takes place* in various real-life contexts, as shown in the “empirical” (or applied) model. It can be seen, then, that the theoretical and empirical model are two aspects of the same social mechanism, in this case, the mechanism which enables interpreting service delivery to take place. This chapter will show how the mechanism became apparent by working through the steps of Franck’s (2002) modelling process. It must be remembered that modelling “does not occur in a neat, linear progression, but that some steps of the modelling process may be pre-empted or occur simultaneously, and ... there may be recursion, even several cycles” (Pratt

2011: xi). For the purposes of unfolding the modelling process in this chapter, however, it will be presented as a linear progression.

First, a description of the actual phenomenon of interpreting service delivery as it occurs in each context will be given. Next, the functions carried out in each case will be identified, so as to show a picture of the “system of functions” involved, or theoretical model, was built up. After this has been done for all five contexts, a theoretical model will be postulated. Then the applied aspects of the interpreting service delivery mechanism will be added by referring back to actual instances of interpreting service delivery in each of the five contexts. This will assist in drawing up an empirical or applied model of interpreting service delivery. The theoretical and applied aspects combined will then be shown to constitute a description of the social mechanism whereby interpreting service delivery takes place.

4.3 Visits to other universities

The various universities which were visited, as well as the salient points emerging to contribute to the modelling, will be dealt with next. The universities which were visited included two international institutions of higher learning, namely, Macquarie University in Australia and the Höger Instituut voor Vertalers en Tolken (HiVT) in Belgium. The latter is not an actual university per se, but an institute where translators and interpreters are trained. However, it was still considered to be a suitable source of data to elicit the functions required for interpreting service delivery to take place. In order to obtain a South African perspective, the following institutions were visited: the

North-West University (NWU), in the Free State province, the University of Johannesburg (UJ), in the Gauteng province and the University of the Free State. As will be shown in this chapter, all these universities yielded data on the kinds of interpreting services provided at university level, and the visits as well as the observations formed the basis of the development of the interpreting services model which was to be applied at DUT.

4.3.1 Macquarie University in Australia

a. Rationale for visiting Macquarie University

The rationale for visiting Macquarie University in Australia was their specialisation in Australian Sign Language (AUSLAN) interpreting, as well as the fact that Macquarie had an academic programme running interpreting courses. Sign language interpreting was not offered by any of the other overseas universities visited.

b. Overview of interpreting services at Macquarie University

The graphics in Figure 4.1 show provision of the interpreting service at Macquarie University. Macquarie University offers post graduate courses on translation and interpreting in the department of Linguistics. As mentioned above, the interpreting courses include AUSLAN, which was the reason for including this university in the visitations, as interpreting of sign language is an aspect of interpreting service delivery, and none of the other overseas universities offered this option. Over and above that, the translation and interpreting programme provided AUSLAN interpreting to the departments in the university, which meant it could be investigated as a part of interpreting

service delivery as used for interpreting in academic programmes. During the visit a lecture on Statistics was observed where the AUSLAN interpreting service was provided.



a. Entrance to Macquarie University



b. Map of Macquarie Campus



c. Lecture venue with interpreting booths



d. Lecturer with simultaneous interpreting equipment

Figure 4.1 Composite of interpreting facilities at Macquarie University

c. Salient features of interpreting service delivery at Macquarie University

The visit to Macquarie University highlighted the fact that certain services are provided because of specific local needs, that is the service was geared to the specific **context** in which it was implemented. The reason for the provision of AUSLAN at Macquarie was that the Statistics Programme had deaf students who used AUSLAN as mother tongue, and it was thus needed for that academic programme. The service was offered on request, and not imposed, as both staff and students were not only agreeable, but clearly needed the service. However, the Programme staff might not have been agreeable to the introduction of AUSLAN had it (and the challenged students) been imposed on them without their being consulted. The university administration would also have to have agreed to implementation of the service, or it would not have been allowed.

This brings up the issue of **sanctioning** or authorising the interpreting service (including satisfying ethical concerns). For example, some participants might feel threatened or patronised by the introduction of what might be seen as a remedial measure. This was not the case at Macquarie, where the students showed evidence of strong appreciation for the service, as they often thanked the interpreters personally after each lecture.

It was possible to offer the interpreting service because the Linguistics Department had suitably qualified and experienced staff. Thus it demonstrated the fact that suitable **resources** are a necessity for various forms of interpreting service delivery to take place.

In order for the interpreting service to be provided during the Statistics lecture, some **organisational** aspects also had to be taken care of in preparation for the lecture. Such aspects included timetabling and the availability of the interpreters. Over and above that, the interpreting service itself had to be organised. At Macquarie University the academic Department of Linguistics, which had the capacity to provide the interpreting service, had to liaise with the Statistics lecturer and sort out all of the organisational issues.

The Linguistics Department in this instance served as a resource instead of the interpreting service being outsourced from outside the university, and that in itself was cost effective, and ensured that the university itself could **regulate** properly the provision of an interpreting service during the Statistics lecture. The nature of the feedback received from students indicated that the service was being carried out effectively, at least, as far as the students were concerned. An indicator of quality for the academic staff was the academic performance of the students.

4.3.2 The HiVT in Belgium

The graphics in Figure 4.2 were taken at the Höger Instituut voor Vertalers en Tolken (HiVT), a well-known institute which trains translators and interpreters in Belgium. The HiVT was visited as it is one of the institutions which form part of the Erasmus Agreement. The institutions which form part of the Erasmus Agreement were funded by the European governments to provide professional training for interpreters and translators who would work for the European

Commission, based in Brussels which was also visited by the researcher while she was in Belgium. The students who register at the HiVT are expected to be competent in French and German as the medium of instruction is conducted in either one of these languages.



a. Entrance to HiVT



b. Lecturer using simultaneous interpreting equipment



c. Students interpreting from booths



d. The European Parliament for which students were being trained

Figure 4.2 Composite of interpreting facilities at the Höger Instituut voor Vertalers en Tolken (HiVT)

In Figure 4.2.b a part time lecturer delivers a lecture in interpreting and is employed by the HiVT, as she works as an interpreter for the European Commission. Figure 4.2.c depicts simultaneous interpreting practice, with students interpreting from booths. Post-degree employment opportunities include working either for the European Parliament, which is multilingual, or the European Commission. At the time of the visit in October 2006, the European Parliament had 23 member states and 11 official languages.

c. Salient features of interpreting service delivery at HiVT

As with the visit to Macquarie University, the visit to the HiVT highlighted the fact that certain services are provided because of interpreting needs in specific local **contexts**. In this case, students were being trained to provide interpreting services in a multilingual European context such as the European Commission or the European Parliament.

The Erasmus Agreement **sanctions** the provision of interpreting services process in terms of it being an accepted practice by mutual consent in European countries. The medium of instruction was in French or German: the students themselves had to be fluent in the predominant European languages of that area to be able to provide interpreting services in Europe.

The HiVT provides the students with **resources** to carry out interpreting services, for example, how to interpret in German, French and Dutch. HiVT employs experienced or senior interpreters who can thus gain academic

experience – and status – as academics while passing on industry skills to the students: thus they are a resource both to the university (in terms of experience) and Industry (in terms of conceptual development). Bursaries were available for students who wished to train as interpreters at HiVT: this raises the issue of financial resources being required for interpreting services to be provided. The Erasmus Agreement provides funding to train interpreters to achieve the level of competence needed for interpreting at the European Commission and the European Parliament.

The HiVT Faculty where the interpreters and translators were to be trained had to sort out **organisational** matters in helping the Institute to honour the Erasmus Agreement, vis-a-vis the training interpreters for who would eventually work for the European Commission. The HiVT itself as an academic institution has autonomy in ensuring the training itself is well thought out and is of a high academic standard.

In terms of ensuring quality in service delivery, the Erasmus Agreement gives interpreting the status of a skilled professional activity. The Industry is **regulated** by the insistence that interpreters are trained properly at well-equipped universities by expert interpreters who are also academics. Having “industry-savvy” experts at training universities also feeds back industry expertise into the training sessions, which means that trainee interpreters do not have to learn all of their lessons by hard experience.

4.3.3 University of Johannesburg

a. Rationale for visiting the University of Johannesburg

The rationale for visiting the University of Johannesburg was their piloting of the provision of interpreting service during the academic programme.

b. Overview of interpreting service delivery at the University of Johannesburg

The graphics in Figure 4.3 were taken at the University of Johannesburg, the Kingsway campus in Johannesburg, Gauteng Province. The university of Johannesburg (UJ) ran a pilot interpreting service during lectures. The lectures were simultaneously interpreted from English into Afrikaans, isiZulu and Sepedi. The interpreters would sit at the back while the lecturers or tutors would deliver the lecture in English. The learners would listen using the mobile interpreting equipment (termed “gadgets”) provided to tune in to the language of their choice in order to follow the lecture which was being interpreted. In this particular instance, because there were no interpreting booths where the interpreters could sit, the interpreters would whisper in different languages into the microphones provided, that is in either isiZulu, Afrikaans or Sepedi. The learner, on the other hand, had a choice of communicating with the lecturer during the lecture in English or any of the three above-mentioned languages where the whispered simultaneous interpreting was provided.

In one session a lecture on cross cultural communication was observed, and the tutorial (i.e. for this lecture) was also observed. Some learners preferred to code switch to the language of their choice upon communicating with the lecturer/ tutors while the interpreting service was being provided. It should be

noted that, unlike the other institutions of higher learning which were visited and already discussed above (Macquarie University and the HiVT), UJ did not have an interpreting laboratory where fixed simultaneous interpreting equipment was installed, but instead used mobile simultaneous interpreting equipment.



a. Entrance to Kingsway Campus, University of Johannesburg



b. Lecture where simultaneous interpreting is provided



c. Tutorial for students using simultaneous interpreting equipment



d. Tutor demonstrating mobile simultaneous interpreting equipment

Figure 4.3 Composite of interpreting facilities at the University of Johannesburg

c. Salient features of interpreting service delivery at the University of Johannesburg

Features of the specific **context** in which interpreting service delivery took place were that lectures were in English, which was the medium of instruction. In this case a service was provided according to the demographics of the students in the department where the interpreting service was being piloted (i.e. responding to a specific need). In order to accommodate the needs of a multicultural student body, lectures needed to be interpreted from English into Afrikaans, isiZulu and Sepedi. The piloting of interpreting services observed during the visitation was carried out within the Intercultural Studies Communication lectures and tutorials, which meant that the demographics of the smaller target group had to be considered. This smaller group contained speakers of all four languages mentioned above, so that these were representative of the languages spoken by the larger student body.

The provision of interpreting services could be considered in the wider context of implementing the university's Language Policy. UJ had a multilingual Language Policy which **sanctioned** provision of interpreting services (as well as the form it took) for the larger student body in the future, once delivery had been tested out in the pilot study. Thus the pilot study itself was conducted so that the university's Language Policy could be tested out for implementation in advance (a *regulatory* issue, see below).

UJ used their own lecturers and university funds to pilot the interpreting service, thus providing the necessary **resources** for the service. However, interpreting booths were not provided, and this might have impacted on the quality of interpreting, as students might have been disturbed or distracted by the whispering.

The **organisational** aspects were dealt with by the academic department itself, as the provision of interpreting services was run as a pilot at UJ. The researchers who were conducting the pilot project had to ensure that everything was well organised for effective interpreting service delivery, including the timetable for both lectures and tutorials for the subject Intercultural Communication Studies, and the provision of simultaneous interpreting equipment and interpreters.

In the interests of ensuring quality, and thus **regulating** the interpreting process, UJ employed only properly qualified interpreters, these being freelance interpreters who were senior or experienced. Lecturers and tutors were bilingual and multilingual, and could monitor the quality of interpreting for academic purposes, and students also provided feedback.

4.3.4 North-West University (Potchefstroom campus)

a. Rationale for visiting North-West University (Potchefstroom campus)

The graphics in Figure 4.4 were taken at North-West University(NWU), Potchefstroom campus which is in the North West Province. NWU was visited

as it is the university which provides the most extensive simultaneous interpreting service as compared to the other universities in the country.

*b. Overview of interpreting service delivery at North-West University
(Potchefstroom campus)*

In Figure 4.4, subsections a. and c. also reveal the main languages of the province and the official languages of the university used by the university, which were Afrikaans, English and Setswana. NWU has a Language Directorate which is responsible for all language matters of the university and under which the interpreting services fall. The university provides an interpreting service in various faculties for a variety of subjects offered by the academic departments. The lecturers deliver the lectures in Afrikaans while the interpreters, who are trained by the university, provide simultaneous interpreting into Setswana or in English. Because the university uses mobile interpreting equipment, the interpreters speak in a low voice into the microphones, hence the form of interpreting service provided is also termed “whispered simultaneous interpreting service”. Initially the university also had lectures in Setswana, but these were eventually discontinued and the only languages used during lectures were Afrikaans and English. The learners (as shown in Figure 4.4.) had a choice of communicating with the lecturers in either Afrikaans or English.

*c. Salient features of interpreting service delivery at Potchefstroom Campus,
North-West University*

The **context** was an Afrikaans-medium university, and the language policy of

the university stipulated three official languages: English, Afrikaans and Setswana (see Figure 4.4.b for an example of multilingual signposting). However, as lectures were delivered in Afrikaans only, an interpreting service was offered as part of implementation of the policy.



a. Entrance to the Potchefstroom Campus of North-West University



b. Example of multilingual signposting at Potchefstroom Campus



c. Lecturer with technician setting up simultaneous interpreting equipment



d. Students using simultaneous interpreting equipment

Figure 4.4 Composite of interpreting facilities at the Potchefstroom Campus, North-West University

The university management **sanctioned** the interpreting service as it was required by their language policy, and moreover, enabled the staff and University Council to carry on in the traditional language of instruction and administration, Afrikaans.

Resources were provided by university funds, and only properly qualified interpreters were employed: these were freelance interpreters who were senior or experienced.

The **organisational** functions for the provision of the interpreting service delivery in various faculties at NWU were carried out at Directorate level, as opposed to academic department level, as was the case with the aforementioned universities (i.e. Macquarie, the HiVT and UJ). Organisation at a higher management level thus afforded the provision of interpreting services a more privileged status. The higher status might well be the reason why NWU provides interpreting services in so many lectures at various faculties. Providing an interpreting service at Council level of the university also requires a higher level of organisational efficiency in terms of the high powered functioning at this level.

A language unit monitors and **regulates** the interpreting service. It must be noted that this unit has higher status than language units in most other universities, and is called the "Language Directorate". Student feedback also helps to regulate the process. Furthermore, lecturers and tutors are bi-lingual

and multilingual, and can monitor the quality of interpreting for academic purposes.

4.3.5 The University of the Free State

a. Rationale for visiting the University of the Free State

The graphics in Figure 4.5 were taken at the University of the Free State (UFS), which is in Bloemfontein in the Free State province. The UFS was visited because it is the first university in South Africa to have a built-in interpreting laboratory with fixed simultaneous interpreting equipment. The interpreting laboratory was funded by the Belgian government and hence it was named the “Vlaamse Tolksentrum” (see Figure 4.5.b). Over and above that, the UFS was visited because the interpreters who provided the interpreting service during South Africa’s Truth and Reconciliation Commission (TRC) hearings and amnesty were either trained or employed through UFS in order to provide simultaneous interpreting service during the TRC hearings and amnesty, when the TRC hearings and amnesty were taking place all over the country. This was of particular interest to the researcher as she had also had the opportunity to interpret during the TRC.

b. Overview of interpreting service delivery at the University of the Free State

In Figure 4.5 the interpreting laboratory is shown where the interpreter training courses took place. Also at some stage the UFS provided an interpreting service during the lectures. The lecturers would deliver the lecture in Afrikaans and the lecture would be interpreted into English. The learners would communicate with the lecturer either in Afrikaans or in English. The mobile

simultaneous equipment which is shown in Figure 4.4.d was used during University Council meetings, Senate and at times at the students' residences. The mobile simultaneous equipment which used by the UFS, was similar to that used by UJ and NWU, which is sometimes called “whispered simultaneous interpreting equipment”. It should be noted that the main official languages in the Free State province are Afrikaans, English and Sesotho.



a. Entrance to interpreting laboratory at University of Free State



b. Plaque acknowledging funding by Belgian Government



c. Laboratory with simultaneous interpreting equipment



d. Mobile simultaneous interpreting equipment used at University of Free State

Figure 4.5 Composite of interpreting facilities at the University of the Free State

c. Salient features of interpreting service delivery at the University of the Free State

UFS is an Afrikaans-medium university, but the language policy of the university stipulates three official languages: English, Afrikaans and Sesotho. This is to ensure that the multicultural study body can understand tuition, thus the demographics of the **context**, as well as the university policy, require an interpreting service. The fact that interpreters who provided the interpreting service during the TRC were either trained or employed through UFS is also a significant feature of the context in which the interpreting service delivery takes place. The background to this was the seriousness and purpose of the TRC hearings and amnesty. A multilingual society requires that people are not marginalised or slighted by having their mother tongue ignored. In 1996, the Constitution of the Republic of South Africa (RSA) had been formulated, but not applied: the TRC was then applying these principles. Thus politics as well as demographics can be seen to play a powerful role in contextualizing a service. For example, University Council meetings had to be interpreted as they had previously been in Afrikaans, and the University would not have countenanced a change to English or Sesotho, as Afrikaans might well have been marginalised in the new political dispensation. The fact that interpreters who provided the interpreting service during the TRC were either trained or employed through UFS had implications for the resources, authorisation and regulating of the interpreting service offered at UFS.

While the introduction of an interpreting service on the surface appeared to be a constitutional move towards multilingualism, it might also be seen as

defensive move for entrenching Afrikaans. The interpreting service would have been **sanctioned** by Council, which was predominantly Afrikaans speaking.

As far as **resourcing** this service was concerned, UFS was the first university in South Africa to provide an interpreting laboratory with fixed simultaneous interpreting equipment, as mentioned above, funded by the Belgian government. This was because specialist staff were available to provide the service.

The **organisation** at UFS for the provision of interpreting services during lectures, as well as at the university's Council meeting, is done by the academic department. However, the Unit for Language Management (ULM) also provides a back up in organising the provision of interpreting services. This is because the ULM has been set up specifically to provide oversight in language-related matters, as well as to conduct research to support and inform implementation. Both the academic department and the ULM collaborate in with planning and organising interpreting services, with regard to sorting out the timetable for lectures and time slots for university meetings including Council meetings, for the efficient provision of interpreting services. The provision of interpreting services is considered part of the implementation of the university's Language Policy (du Plessis 2008; 2010) as it is the case with UJ and NWU.

As in NWU, a language unit monitored and **regulates** the interpreting service, but does not enjoy as high a status as the one at NWU.

4.4 The properties of the social system comprising an interpreting service

While the terms “interpreting services” and “interpreting service delivery” are used interchangeably in the literature, and have in fact been used as such in this account up until now, the visits to universities confirmed that, where interpreting services are provided, its provision was characterised in terms of *service delivery*. In the literature, the closer one gets to actual implementation, the more likely one is to find the terms “service” or “service delivery” (see Verhoef, 2010c: 61). The “property of the social system of interpreting services”, then, is that it is in the nature of a service delivery. The process of interpreting itself has distinct professional features (as with any specialist service), as explored in the Literature Review, but it takes place as a service rendered, whether by professionals or freelancers, and whether paid for or free of charge.

In retrospect this aspect of service provision and service delivery was found to come up frequently in various works in the literature reviewed, without, however, being explicitly examined in terms of its implications for providing interpreting services. The extent to which service delivery was seen to be successful in each of the above university contexts relied on the factors governing effective service delivery, factors which were common in all contexts, but with context-dependent variations in each case. This meant that the researcher was able to identify the common factors in interpreting service delivery, as well as to include a contextualising function which might be used

by service providers to identify how local conditions and needs might impact on the givens of service delivery. The common aspects, as well as the need to have a built-in contextualising function in a model of interpreting service delivery, are explicated below, in the unfolding of the theoretical model of interpreting service delivery.

4.5 The theoretical model of interpreting service delivery

This section will first look at the source of the theoretical model of interpreting service delivery, and next, the system of functions involved in interpreting service delivery, which constitute the theoretical model of interpreting service delivery.

4.5.1 Source of the theoretical model of interpreting service delivery

According to Franck, the source of a theoretical model is irrelevant: “it doesn’t matter where ones ideas come from in science, so long as they are reasonably clear and coherent, relevant to the matter at hand, have explanatory power, and are subject to empirical evaluation” (2002:252). However, as Franck points out, “it [i.e. the explanation] of course cannot contain statements which are clearly false”. By “empirical evaluation” Franck means that a fit can be observed between features of the model and features of the social phenomenon as observed to occur in everyday life. In this study, the researcher formulated the theoretical model used insights gained from a consideration of models found in the literature, her own extensive experience in interpreting, and her visits to various universities. As shown above, in each of the visitations common elements could be found, all

pointing to the essential functions “without which” interpreting service delivery could not take place.

4.5.2 The system of functions involved in interpreting service delivery

As shown in Table 4.1, in order to take place, in order for interpreting service delivery to take place, it must be:

1. contextualised
2. sanctioned
3. resourced
4. organised
5. regulated

The rationale for selecting these functions is given in Table 4.1, and is explained as follows. Before any social service delivery is set in place, it must be **contextualised** to establish both the need and other contextual factors already in place (e.g. human or infrastructural resources). Next, the service must be **sanctioned** by the authorities and/or participants before it can take place. In most cases government, provincial and institutional policies dictate what kinds of service take place and how. The interpreting service must be properly **resourced** for delivery to take place, including provision of human and financial resources, as well as the necessary infrastructure. Clearly there are many social services which would fit the above criteria, but these cannot be implemented unless this is feasible. An interpreting service must be **organised** by the service provider/s so that it is implemented smoothly and efficiently; without proper organisation, it may not take place at all. Finally,

service delivery must be **regulated** in order to assure quality service. This “system of essential functions” in fact comprises the **theoretical model** (Franck 2002: 96) or “deep structure” (Bhaskar 1979: 16) of service delivery.

Table 4.1 The theoretical model of interpreting service delivery

FUNCTIONS	RATIONALE FOR CHOOSING THE FUNCTIONS
Service delivery must be:	Service delivery must be:
Contextualised	...contextualised to establish what setting and participants are involved, what type of service is required, and to what extent the service is feasible.
Sanctioned	...sanctioned by some form of authorisation and/or consent by authorities and/or participants.
Resourced	...resourced by human, financial and infrastructural resources.
Organised	...organised by the service provider/s so that it is implemented smoothly and efficiently.
Regulated	...regulated by means of interpreting codes of conduct, provisions of institutional policies (including quality policies), regular monitoring, and feedback from clients and service providers.

It should be noted that some of these functions are pre-empted in the literature, as elements of the functions can be found in existing models of interpreting service delivery. However, it must also be remembered that these were mostly ad hoc applications in specific contexts, and hence not generalisable or necessarily applicable in other contexts. As already mentioned, the term “model” when applied to interpreting in the literature has

wide application, and can refer to a list of the various **contexts** or situations in which interpreting takes place (Health Canada 2006), or the interpreting process itself (Chernov 1979): describing the mechanism of interpreting rather than that of interpreting service delivery. When applied to service delivery, a “model” could refer not only to various contexts, but also to issues relating to those contexts, such as ethics (i.e. of health service delivery), **resources** (including costs) or regulations or policies authorising (i.e. **sanctioning**) the service (TISSA 2002; Verhoef & du Plessis 2008). The need for the interpreting service to be highly **organised** is stressed in Verhoef’s “Processes according to which service delivery is organised and the respective associated subsets” (2010c: 61).

The effort required in interpreting, and the coping tactics used during the process of interpreting (Gile 1995) were also mentioned in some models, and could be an issue for either resourcing interpreting service delivery or regulating it, as more interpreters might be needed to avoid fatigue, which has relevance for the issue of maintaining quality interpreting performance. The focus on ethical issues, in retrospect, suggests a concern with **regulating** interpreting services.

4.6 The mechanism involved in interpreting service delivery

As mentioned before, social mechanisms contain both formal (Franck 2002: 88) and applied aspects (2002: 96). In the mechanism involved in interpreting service delivery, the formal aspect is the system of functions identified in 4.4, as shown in Table 4.1. The applied aspect is described below in section 4.6,

in the right-hand column of Table 4.2, which shows how the functions required for interpreting service delivery might be carried out in real-life situations. It is in fact the need to identify the applied aspect of the mechanism which leads to the formulation of an empirical (i.e. applied) model.

4.7 The empirical model of interpreting service delivery

Table 4.2 illustrates the practical implementation of service delivery in the specific area of interpreting. The first column shows the functions essential for service delivery to take place, and the second column shows the practical implementation of interpreting service delivery. The second column in fact represents an empirical model of interpreting service delivery. However, as will be discussed later, determining the specifics of implementation require an input option to be added to the mechanism.

4.7.1 The contextual function in interpreting service delivery

Any proposed interpreting service must be contextualised before delivery can take place. This is because considering the setting and participants will establish the nature of the mode and type of interpreting service needed as well as the feasibility of providing such a service. One must consider whether a social service is necessary before delivery is even considered. Interpreting would be needed in communicative interactions where there is cultural and linguistic diversity, particularly when there is a lack of a common vernacular at the required level. South Africa, as a multilingual and multicultural country, needed to improve the facilitation of its communication especially when eleven

official languages were introduced after the first democratic elections in 1994, and subsequently, when in 1996 the constitution of the country stipulated that

Table 4.2 The empirical model of interpreting service delivery

ESSENTIAL FUNCTIONS	PRACTICAL IMPLEMENTATION (i.e. EMPIRICAL MODEL OF INTERPRETING SERVICE DELIVERY)
Contextual	Considering the context and participants will establish the mode or type of interpreting service needed as well as the feasibility of providing such a service.
Sanctioning	Interpreting must be sanctioned by participants and authorities (e.g. according to government and provincial policies, institutional policies, agreement of CEOs, and agreement of clients.)
Resourcing	Funds, infrastructure, service providers (i.e. staff, and training) and equipment, transport and venues will be needed for implementation.
⁹ Organising	The interpreting process must be organised so that it follows a smooth procedure which does not interfere with or intrude unnecessarily on the communicative interaction.
Regulatory	Interpreting requires careful regulation by means of monitoring, codes of conduct, provisions of institutional policies (including quality policies) and mechanisms providing feedback from clients and service providers.

there were eleven official languages (Constitution of the Republic of South Africa 1996). For instance at Macquarie University in Australia where Sign Language is provided during lectures, the interpreting service is needed by the

⁹ The “organising function” was added later, but is included here for the sake of unfolding the account of the model clearly.

deaf students because the lecturer spoke in English only and would not be understood by the students. Therefore they relied heavily on the sign language interpreter to render the interpreting service from English into Sign Language. Again at North-West University, the Setswana and English speaking students who do not understand Afrikaans needed the interpreting service from Afrikaans into English otherwise they would not follow what the lecturer is saying and thus would be disadvantaged.

While South Africa is a multicultural and multilingual country in desperate need of interpreting services at many levels (e.g. social, official, commercial and so on), there are real constraints to service delivery in terms of resources available. Interpreting service delivery would need to be justifiable in terms of numbers/costs, constraints caused by geographical separation and constraints caused by limited resources. The feasibility of the TISSA project was dependent on it being well resourced, and, in fact, it ultimately did not succeed because of lack of funding. The TISSA project was, however, monitored to ensure the quality of the service delivery. In all instances the provision of the interpreting service, feasibility is also crucial. The provision of the service would need to be justifiable in terms of number of people who require it and has to be cost effective. In all the universities visited, their interpreting service could not be provided in all campuses, hence some universities like the University of Johannesburg and Durban University of Technology had to provide the service as a pilot project in order to determine the feasibility of interpreting during the lectures and to overcome some constraints caused by geographical separation and by limited resources.

4.7.2 The sanctioning function in interpreting service delivery

The next prerequisite is that the interpreting service must be sanctioned. The service must be authorized by both participants and the given authorities for that area or community. An interpreting service would be socially sanctioned by government and provincial policies, institutional policies, agreement of CEOs, and agreement of clients. In rural areas or where traditional customs still hold power, a service might be sanctioned by oral traditions or community custom. For instance, at national level, the government, through the Minister of Arts and Culture, introduced the Telephone Interpreting Service of South Africa (TISSA 2002) which was used at different levels, provincial and local tiers of government. At university level, in order for the interpreting service to be delivered, there has to be an institutional body which would allow such a service. The authority may be the institutional policies including the language policies, and the Vice Chancellor, the Dean and the lecturers involved must give permission for the service to be provided or delivered. The students who require the service would most likely be in agreement as they would benefit. For instance at Free State and North-West Universities where the council meetings are interpreted, permission is given, and all participants agree to and benefit from the service.

4.7.3 The resourcing function in interpreting service delivery

The interpreting service must be resourced. No social service can take place without the necessary resources, such as funds, infrastructure, service providers (i.e. staff, and training) and equipment. Transport and venues may

also be needed for implementation. Interpreting, in particular, requires specific skills as well as specialized equipment. The TISSA project had to have multilingual interpreters who would be available by telephone whenever they were required. An interpreting service requires appropriate resources in order to be sanctioned successfully. Resources include interpreting equipment, as with the equipment used by the Durban University of Technology, University of Johannesburg, and the University of the Free State. The equipment has to be manned by a technician, and there have to be interpreters who will convey the message from the source language into the target language, including sign language interpreters, if necessary. Appropriate venues have to be provided if fixed equipment is to be used, as was initially the case at DUT, otherwise, mobile equipment can be used. Above all, resourcing requires the availability of funds to pay the staff as well as the equipment. At other universities, such as Free State, North-West and the University of Johannesburg, the provision of the interpreting service is part of the implementation of their language policies, meaning that the necessary resources are provided by the universities.

4.7.4 The organising function in interpreting service delivery

It is essential that the interpreting process is organised so that it follows a smooth procedure which does not interfere with, or intrude unnecessarily on the communicative interaction. Verhoef's method for assuring and measuring quality in classroom interpreting is in fact entitled "Processes according to which service delivery is *organised*" (2010:60-61, my emphasis). Aspects of organising are involved at all phases of interpreting: 1. Pre-process, 2. Peri-

process 3. In-process and 4. Post process. However, organisational needs per stage, and possibly even the stages involved, may differ according to the domain and type of interpreting required. Different interpreting domains (e.g. classroom, conference) as well as different types of interpreting (e.g. simultaneous, consecutive) may very well require different levels of organisation. The organising function may be masked in operation, as it can tend to be lost in the general organising functions carried out by universities in the course of organising programme delivery - or functions. Moreover, the providers of interpreting services are often academic staff associated with the institution, and are therefore expected to organise educational events as part of their routine duties.

4.7.5 The regulatory function in interpreting service delivery

Any service delivery would need to be regulated in terms of quality and potential abuse of vulnerable groups, or even just bureaucratic - or incompetent - behaviour towards members of the public. End users may react negatively if the service is not well monitored to assure quality. Interpreting, in particular, needs to be regulated in terms of its official use, that is to interpret court proceedings or in the health sector. Interpreting currently has no regulatory or professional body in South Africa (Verhoef & Du Plessis 2010), but by its very nature requires interpreting codes of conduct, the provisions of institutional policies (including quality policies) and mechanisms providing feedback from clients and service providers. The provision of the interpreting service has to be monitored and quality must be assured. That means the interpreters have to be well trained in order to adhere to the code of conduct

and ethics, as it was the case with all the universities visited. Learner and lecturer feedback helps to regulate the provision of an interpreting service, which is then quality assured, and also helps with the continuous improvement in rendering such a service. The research which was conducted by North-West University is a typical example of procedures which ensure that a regulatory function is carried out. Professional interpreting associations play a role in regulating interpreting services. However, the existence of the South African Translators' Institute (SATI) as a members' association means that it is not well recognised by non-members, the main reason being that it is not a government entity and it is therefore not constituted by any act. On the other hand, it is probably because of the non-existence of a government regulatory body for interpreting services that SATI is internationally recognised by other interpreting bodies outside the borders of South Africa.

4.7.6 Order in which the functions are effected in real-world situations

It must be emphasised that, while service delivery should be properly contextualised in order for it to take place at all, the order in which the functions are effected is not necessarily in a neat sequence of 1.- 5. (the problem with process models which follow a simplistic linear sequence). The delivery process is naturally recursive and unpredictable, with much backtracking and rethinking, no matter how well conceptualised or organised.

4.8 Conclusion

This chapter showed how Franck's (2002) modelling process was used to identify the properties of the system involved in providing interpreting services

at various universities visited, and to arrive at the system of functions which could be seen as necessary for such services to take place. The system of essential functions was then shown to constitute the theoretical model of interpreting service delivery, and assisted the formulation of an applied (or empirical) model showing the mechanism(s) whereby this social practice takes place. The resulting model of interpreting service delivery consists of a theoretical model of service delivery, comprising the functions necessary for the mechanism, and a model of the practical implementation of interpreting services, that is, an empirical model. The theoretical and empirical model together comprise the interpreting service delivery mechanism: the interpreting service delivery mechanism thus has two aspects, formal and applied.

CHAPTER 5: VALIDATION OF THE MODELS

5.1 Introduction

Chapter 5, involving the second part of the empirical work, continues the course of the modelling process, as follows:

- by applying the empirical model of interpreting service delivery in a university context (i.e. trying out the empirical model to see if it actually achieves interpreting service delivery) (Stage 5).
- by checking the theoretical model to ensure that it fits the real-life functioning of interpreting service delivery, adjusting it if necessary, thus validating it in the process (Stage 6).
- by exploring whether the theoretical model has possible application for service delivery in other areas of social life (Stage 7).

This involves application of the model as applied to the interpreting services offered at DUT.

5.2 Application of the model at DUT

The model was applied in various contexts of university life, taking into consideration how the essential functions of the model could be carried out. Such functions as were already outlined in the previous chapter are as follows: that the service has to be contextualised, resourced, sanctioned, and, finally, it has to be regulated. What follows now is the application of the model at DUT.

In Figure 5.1 the five functions necessary for interpreting service delivery to take place are superimposed over an aerial photograph of the Durban Campus at DUT. It must be remembered, however, that DUT has seven campuses, some over 90km away from the Durban campuses, and that this has potential impact on achieving all five functions satisfactorily (this point will be taken up later, on discussion of input into the interpreting service delivery system).

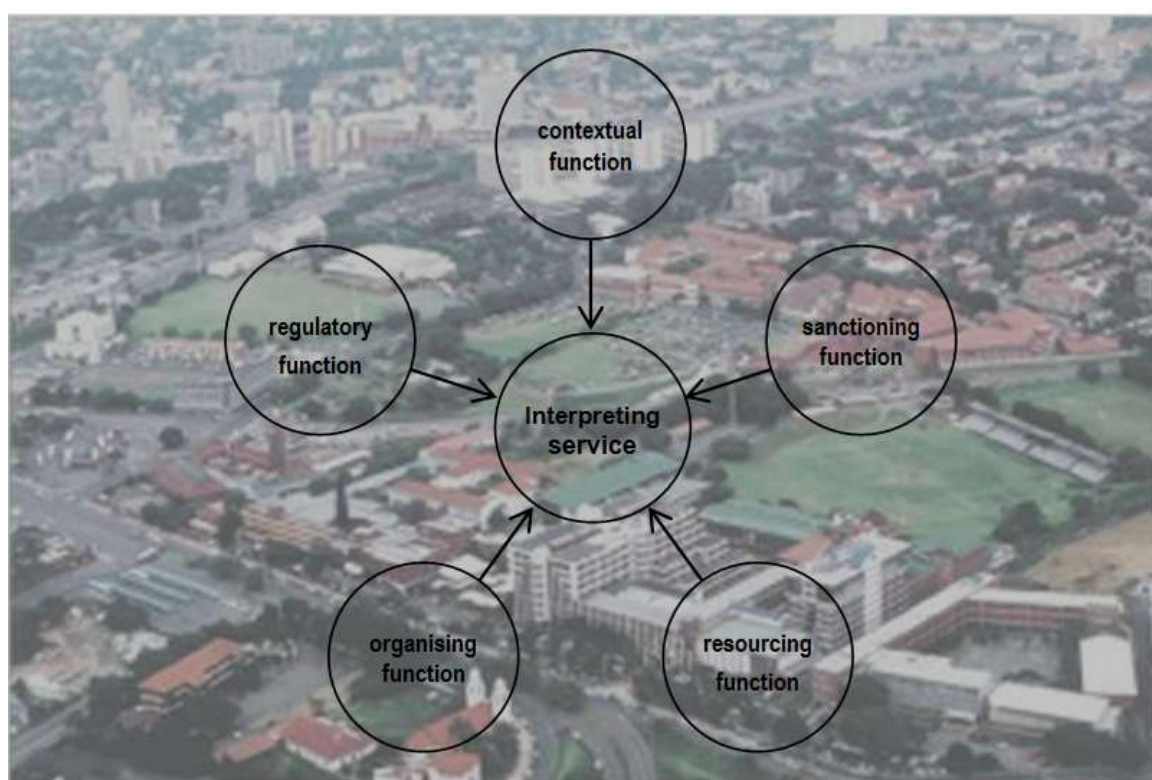


Figure 5.1 The theoretical model underpinning interpreting service delivery at DUT

The first context where the interpreting service model was applied at DUT was in interpreting lectures delivered in one of the academic programmes, in this case, during lectures on Dental Assisting. The second context was during DUT graduation ceremonies, where parents were offered an interpreting

service which would enable them to understand the speeches and addresses delivered by presiding officials and dignitaries. The third context was the Faculty of Arts and Design 2009 conference, where interpreting was offered during plenary sessions on day one, including the keynote address. The interpreting service delivery model was also tested out for its applicability in the context of DUT disciplinary hearings. In the sections below, the essential functions carried out will be in boldface, while aspects of the planning and practical implementation (i.e. the empirical model) will be in square brackets, in italics. Any necessary adjustments to the empirical model will be shown in square brackets, in bold italics.

5.2.1 Interpreting services during Dental Assisting lectures

All the five functions of the interpreting services model had to be fulfilled in order for the service to be successfully provided. The service had to be **contextualised**. Figure 5.2 depicts the provision of interpreting service during selected Dental Assisting lectures [*setting*] at DUT (i.e. selected for a study piloting academic interpreting). Dental Assisting is one of the programmes offered in the Faculty of Health Sciences at DUT. In this instance the lecturers and the students [*participants*] in the Dental Assisting programme spoke different languages (i.e. isiZulu, English, isiXhosa, Setswana and siSwati) [*participants' needs*]. In order to bridge the language barrier, an interpreting service had to be provided. The nature of the setting, the lecture, meant that the simultaneous mode of interpreting [*type of service*] was chosen, where the speaker and the interpreter were able to speak almost at the same time, that is simultaneously.



a. Lecturers preparing for the lecture



b. Technicians issuing mobile simultaneous interpreting equipment



c. Students using fixed simultaneous interpreting equipment



d. Interpreters in an interpreting booth providing simultaneous interpreting

Figure 5.2 Interpreting services during Dental Assisting lectures

During application of the empirical model of interpreting service delivery at DUT, it was noticed that, for the service to be feasible [*feasibility*], the other essential functions (i.e. sanctioning, resourcing, organising and regulating) all needed to be considered in terms of the feasibility of providing interpreting service delivery, as part of the contextualizing function [*the empirical model needed to be adjusted to “fit”*]. It was feasible to provide the interpreting

service during Dental Assisting lectures, because the then Department of Language and Translation (now two Programmes¹⁰) could supply both the staff and the necessary equipment (i.e. resources). interpreting service delivery was not only permissible, but requested, in this case. It was easy to regulate the service, as it was a pilot study, and part of a research project on multilingualism, and thus closely monitored.

To return to how the other functions were actually carried out, the second prerequisite is that the service has to be **sanctioned**. In this instance the HOD [*authority*] of the then Dental Assisting Department requested the interpreting service to be provided, even though the DUT Language Policy [*policy*] had not yet been formulated (a draft policy, was available, however). Not only did he request an interpreting service, but also requested that his lecturing staff and some students be taught isiZulu so that they could handle in-service training and their eventual work in a multicultural setting. The interpreting brief was that the lecturers would deliver the lectures in English and such lectures would simultaneously be interpreted into isiZulu, so that both the lecturers and the students would benefit from the service. Also, a proviso was added that isiZulu-speaking students might be allowed to ask questions in isiZulu during the lectures, and that these were to be simultaneously interpreted into English, so that the English-speaking lecturers could respond accordingly [sanctions include *participant* input].

¹⁰ Three departments, English & Communication, Language & Translation and Journalism were merged as part of a Faculty Restructuring Exercise carried out by the DUT in 2008. The merged department was named the Department of Media, Language and Communication.

The interpreting service delivery was **resourced** by the following means. In this instance the Department of Language and Translation provided the simultaneous interpreting equipment, the technicians and the interpreters [*staff, equipment*], Initially the lectures were held in the interpreting laboratory [*infrastructure, venue*] which is located in the department of Language and Translation in Mariam Bee building at the ML Sultan campus, where the fixed simultaneous interpreting equipment was located. Fortunately, through the SANTED project and, later on, through the Teaching and Development Grant (TDG) [*funds*], mobile interpreting equipment was purchased and that enabled interpreting service to be provided in the actual Dental Assisting lecture venues located in B block at the ML Sultan campus. The interpreters and the technicians also had to be paid, and again, through the SANTED project funds [*funds*] for both interpreters and technicians were obtained through the SANTED project.

In order for the interpreting service delivery to be provided effectively during the Dental Assisting lectures, it had to be well **organised**. The Department of Language and Translation, which has the capacity to provide interpreting service delivery in terms of infrastructural and human resources, played a crucial role in organising interpreting service delivery during the Dental Assisting lectures. However, organising the provision of interpreting service delivery had of course to be done in liaison with the department of Dental Assisting where the interpreting service delivery was to be provided. Part of organising for the provision of interpreting service delivery, included sorting out

the student and lecturer timetables of both the academic departments, availability and proper functioning of the interpreting equipment.

The fifth function of the interpreting service model specifies that the service has to be **regulated**. In this instance, so as to ensure quality academic interpreting [*quality*], the interpreters were trained in the discipline-specific register of Dental Assisting. To achieve this, they were provided with a comprehensive terminology list, which were then dealt with further by the lecturers in the Department of Language & Translation. The terms were developed through terminology development workshops where the participants comprised departmental lecturers as well as the subject specialist in the Dental Assisting field. The terms were then collated and compiled into booklets which were used by the students, the lecturers and the interpreters during Dental Assisting lectures (see Appendix F). Some of the lecture notes were translated from English into isiZulu by the lecturers who were professional translators from the department of Language and Translation [*quality*], with the help of a subject specialist from the Dental Assisting programme. Finally, lecturing staff and students were issued with questionnaires to evaluate the service [*feedback*], completing the regulating process in terms of monitoring the quality of the interpreting service delivery.

5.2.2 Interpreting services during the graduation ceremonies

The graphics in Figure 5 depict the provision of the interpreting service during the DUT graduation ceremonies [*context*]. The provision of such a service also fulfils the requirements of the interpreting services delivery model is developed

in this study. The first function of the model requires the model to be **contextualised**, which, as was realised in retrospect, had included a consideration of the other three functions.



a. Technicians explaining mobile simultaneous interpreting equipment to parents attending DUT Graduation ceremony



b. Parents following the Graduation ceremony with the help of mobile simultaneous interpreting equipment



c. Members of DUT Graduation Congregation who can now be understood by isiZulu-speaking parents



d. Interpreters in an interpreting booth providing simultaneous interpreting service

Figure 5.3 Interpreting services during DUT Graduation

In this instance the context was that the DUT officials who conducted the graduation ceremony and the parents of the diplomates or graduands spoke different languages [*participants' needs*], which meant there was a need for

simultaneous interpreting during the ceremony [*type*]. As with the Dental Assisting lectures (in a. above), it was feasible to provide an interpreting service [*feasibility*], as resources were available, which had to be considered before interpreting service delivery could be envisaged. Sanctioning was granted by the Vice-Chancellor's wish to demonstrate publicly that multilingualism was being accommodated at DUT, and the service could be regulated by means of participant feedback.

The third function of the interpreting service delivery model requires that the interpreting service has to be **resourced**. In this instance, new mobile simultaneous interpreting equipment [*equipment*] had been purchased for the Department of Language and Translation. The Vice-Chancellor had arranged for funding [*funds*] from the Teaching and Development Grant (TDG) to buy mobile simultaneous interpreting equipment [*type of service*] as part of promoting multilingualism, and to support staff research initiatives. Furthermore, it was in support, not only of staff doctoral research, but also of the SANTED research project on multilingualism, to which DUT was committed [*policy*], in partnership with the University of KwaZulu-Natal (UKZN). The interpreters as well as the technicians came from the Department of Language and Translation [*staff with training*], as with interpreting for Dental Assisting [*previous training*], and were again paid by funds from the SANTED project [*funds*]. The senior students demonstrating the equipment and briefing parents did this as part of their work integrated learning (WIL) [*training*].

As is the case with the provision of interpreting service delivery during lectures, the fourth function necessary for of interpreting service delivery is the **organising** function. In this instance the researcher, who was the DUT SANTED Project Co-ordinator and the HOD of the (then) Language & Translation Department, had to liaise with both the Dental Assisting department as well as the DUT graduation organisers. The Vice Chancellor had to be consulted as part of organising and officially announcing the provision of the interpreting service delivery during the graduation ceremonies. In terms of rendering the service, the human and infrastructural resources, as well as transport arrangements, had to be well organised in advance in order for the interpreting service delivery to be provided during the graduation ceremonies without any disturbance during the proceedings of the ceremonies.

The fifth function requires that the service has to be **regulated**, meaning that the issue of quality assurance [*quality policy*] had to be well taken care of. The interpreters as well as the technicians who had been trained to provide the interpreting service during the Dental Assisting lectures were used [*quality assured through prior training*], once again coming from the department of Language and Translation [*trained staff, assuring quality*]. In order to ensure that the parents of the diplomates or graduands knew how to operate the mobile simultaneous interpreting equipment, before the graduation ceremonies a demonstration as well as a briefing was carried out at the entrance to the graduation venue by senior students registered for the National Diploma in Translation and Interpreting Practice. This was to ensure smooth running of

the service during the ceremony [*quality*]. Apart from making every effort before and during graduation to ensure quality interpreting service delivery, the parents using the interpreting service were issued with questionnaires to evaluate the service: their responses could thus provide feedback for subsequent instances of interpreting service delivery [*feedback*].

5.2.3 Interpreting services during the *FAD Conference 2009*

Figure 5.4 illustrates aspects of providing an interpreting service delivery during the 2009 Faculty of Arts and Design (FAD) Conference at DUT. The first function of the interpreting services model requires that the service has to be **contextualised**. In this instance the feasibility of offering such a service for the first time during a conference [*setting*] at DUT was considered because the conference proceedings were conducted in English while some of the conference delegates were not first language speakers of English, and that created the need for the service to be provided [*participants' needs*]. As the conference was held on Ritson Campus, where deaf students were registered (i.e. in the Information Technology programme), South African Sign Language (SASL) was provided at the same time as oral simultaneous interpreting [*types of service*]. This was the first time in piloting the provision of interpreting service delivery at DUT that signing was used. As with the Dental Assisting lectures and graduation ceremonies (in a. and b. above), resources were already available, and the service was sanctioned by the Conference Chair, who was also the Faculty Research Co-ordinator. As before, an opportunity for feedback could be provided. Staffing was provided by students and

technicians of the Translation and Interpreting Practice programme¹¹. It must be noted, though, that, because the conference ran for three days and parallel presentations were scheduled in two venues [*setting*] there were insufficient staff to cover the whole conference, so that a comprehensive interpreting service was not feasible [*feasibility*].

The second function of the model states that the interpreting service has to be **sanctioned**. The conference organiser, who was also the Research Coordinator in the Faculty of Arts and Design [*authority*], sanctioned the service to be provided in order to bridge the language gap during the conference and to promote multilingualism. Moreover, the provision of an interpreting service at a conference, apart from being a “first” at DUT, was a practical demonstration of the content of a paper delivered by the researcher on the provision of an interpreting service.

The third function of the interpreting service model requires that the service needs to be **resourced**. The mobile interpreting equipment used for lectures on Interpreting Theory and Practice (ITPR) provided the necessary equipment. The senior students (3rd year) who had been attending ITPR lectures acted as interpreters and assistant technicians [*staff, training*]. Staff and students from the Translation and Interpreting Practice programme provided the necessary interpreters for interpreting presentations into both isiZulu and SASL [*staff, training*]. Because of limited staff resources, however, the interpreting service was provided only during the plenary session on the first

¹¹ One of the programmes in the former Department of Language & Translation, now merged into the Department of Media, Language & Communication.

day of the conference [*this necessitated adjusting the model to include a consideration of resources during for the contextualising process to establish feasibility.*]

The **organisational** function of the interpreting service delivery also needed to be carried out before and during the *FAD Conference 2009*. The researcher as the DUT SANTED Project Co-ordinator had to liaise with the FAD Research Co-ordinator in organising the smooth provision of the interpreting service delivery during the conference. The organisational function had to be carried out to coordinate both the human and infrastructural resources. It involved, inter alia, checking that the venue was suitable, and arranging transportation to the venue where the interpreting service delivery would be provided.

Apart from the conference giving the researcher the opportunity to demonstrate interpreting service delivery in action, the delivery of a paper on the interpreting service delivery process (Makhubu 2009a) meant that feedback [*feedback*] could be given to the researcher by delegates during and after this paper presentation, thus assisting with the **regulatory** function. In order for the service to be efficiently provided, quality assurance issues had to be taken into consideration. The interpreters for both spoken and Sign Language, as well as the technicians, came from the Translation & Interpreting Practice programme, and thus had both training and experience in interpreting and operating the equipment [*quality, also part of resourcing*].



a. Technicians issuing and testing mobile simultaneous interpreting equipment before the conference

b. Delegate testing signal of mobile simultaneous interpreting equipment



c. Delegate using mobile simultaneous interpreting equipment during the conference

d. Sign Language interpreting during a plenary session

Figure 5.4 Interpreting services during the *FAD Conference 2009*

5.2.4 Interpreting services during disciplinary hearings

Because disciplinary action deals with small group communication in an office or boardroom setting [*setting*], a consecutive mode of interpreting had to be used [*type of service*]. In this instance liaison interpreting was considered as the best option to accommodate participants [*participants' needs, type of*

service.] The interpreting services which were provided during the disciplinary hearings at DUT were not captured either on video camera or on the digital camera to maintain confidentiality, hence no graphics are provided in this section. However, all the functions of the interpreting services model were fulfilled. The service was **contextualised**, as there was clearly a need to provide the service: the participants habitually spoke different languages, and both parties required an interpreting service to bridge the language barrier [participants' needs]. Unlike in the previous sections, however, the university management was obliged to provide all of the necessary resources. The sanctioning of the service was primarily through the provisions of the labour laws, and procedures had to be strictly regulated by university management (via the presiding officer) as being fair and satisfactory to all parties involved. Contextualising the process involved a prior consideration of all of these factors, the key issue being that, as disciplinary procedures are stipulated by the labour laws, fair and equitable conditions, including provision of an effective interpreting service, must be set in place by the university, and not the service provider [*feasibility*].

The labour laws require interpreting to be provided at disciplinary proceedings, thus **sanctioning** its use in advance [*sanction by government*]. The university authorities sanctioned it at a lower level by authorising [*sanction by authorities*] that the service should be carried out by suitably qualified and experienced staff (i.e. lecturers from the Department of Language & Translation). It must be noted that further sanctioning constraints can be added by participants who

might object to or prefer certain interpreters in view of their perceived collegial or management affiliation [*sanction by participants*].

Because the interpreting service had to be **resourced**, this meant that the interpreters, although they lectured in an academic programme and thus drew a salary [staff, training], had to be compensated accordingly by the university [funds] as this was over and above the job description of lecturer. The university also had to provide recording equipment which allowed all of the parties involved to speak into the microphone/s provided [*equipment*].

The **organisational** function of the provision of interpreting service delivery during the DUT disciplinary is a complicated and has to be treated with sensitivity mainly because of the confidentiality and other legal implications. In order to organise the interpreting service delivery, the DUT Human Resources Department had to ensure that all the parties involved were present during the hearing, including the interpreter who would provide the interpreting service delivery. Prior arrangements in this instance also warrants proper briefing for all the parties as to the provision and the nature of the interpreting service delivery which would be take place during the disciplinary hearing.

The last function of the interpreting service model is that the service has to be **regulated**. In this instance, a qualified and experienced interpreters had to be used to provide the interpreting service [*quality*]. Qualified and experienced interpreters would adhere to professionalism [quality], which includes *inter alia* an undertaking not to divulge any information of the proceedings which would

compromise confidentiality [*labour law policy*]. Confidentiality agreements would also need to be signed as part of the process [*labour law policy*]. Feedback from participants during the proceedings as to the accuracy of the interpreting also carries out a regulatory function [*feedback*].

5.3 Validation of the models

As mentioned earlier, the empirical model is validated by its applicability in a real life situation, and the theoretical model is validated in terms of its match with the empirical model. The models may need to be adjusted to include any additional or changed factors noted in the course of applying them in real life interpreting contexts, and this section will deal with any modifications carried out. This section will also look at the need to add an input option into the interpreting service delivery system described in the empirical model, as well as the extent to which the theoretical model of interpreting service delivery can be viewed as a generalisable principle for service delivery in general, which might also require an input option to distinguish between various types of service delivery.

Pratt points out that “there is no one method of validating human performance models”, “different types of models require very different validation techniques”, and “the validity of a model needs to be assessed in terms of its purpose” (2007:197). As with Pratt’s model of the composing system (2007:175), the social mechanism involved in interpreting service delivery cannot be validated as a scientific law producing predictable results (Franck 2002:297; 232-234). It is therefore not the contention of this study

that that the models have predictive force in the sense of producing regular and effective results. This is because social structures are “activity-dependent” (Judd 2003: 50), by which is meant that they are dependent on human behaviour. Human social behaviour falls within certain patterns and constraints, but is not 100% predictable.

Yet, as Judd points out, theories have “a prognostic quality regarding possible outcomes of a particular phenomenon” (Judd 2003: 54). Thus the models formulated in this study may be used to assess the likelihood of success of interpreting service delivery, as well as to diagnose problems in interpreting service delivery. If the functions are indeed “essential functions” of interpreting service delivery, “without which” it cannot take place, the model may well be used to predict failure of interpreting service delivery if all functions cannot be carried out, or, if carried out, are not seen to be carried out properly.

Judd also makes the point that everyday social practice is informed by concepts (Judd 2003: 51). The purpose of the modelling was to improve the quality of life for participants by giving them a more accurate description of interpreting service delivery than hitherto provided (i.e. by “rule-of-thumb” advice): it would, it was hoped, provide participants with a “conceptual mechanism informing their everyday practice” (Pratt 2007: 46, 255).

5.3.1 Validation of the empirical model

The empirical (i.e. applied) model of interpreting service delivery can be seen to match its application in various contexts at DUT, which was the purpose of this study. This is because the fulfilling of the essential functions by carrying out the various activities contained in the empirical model could be seen to achieve interpreting service delivery in contexts representative of some of the main features of university life: lecturing in the disciplines, academic and research functions (for in-house conferences and seminars), and labour-related interactions. The main provisions of the empirical model were therefore not changed. However, the whole point of testing out a model is to see if it fits real life social functioning. Some aspects emerged or were clarified as the application of the empirical model of interpreting service delivery at DUT proceeded. As a result, further refinements were made to the model as well as slight adjustments to the wording (see Table 5.1).

a. Adjustment to the contextual section

When the model was being formulated there was some debate, including at international conferences (Makhubu 2010), on the categorising of the four essential functions required for interpreting service delivery to take place. What was eventually termed the “contextual” function proved to be the most difficult function to categorise, although in retrospect it could be seen to be a key factor in the interpreting service delivery practices observed in the university visitations. Terms such as “need” and “feasibility” had come to mind, but it was decided that these could be seen as part of the contextualising process. However, reflection on the carrying out of the contextual function in actual

interpreting service delivery practice (as shown above) suggested that at this stage it was very important to consider not only the context and participants but also the subsequent functions.

In 5.2.1 above it was stated:

During application of the empirical model of interpreting service delivery at DUT, it was noticed that, for the service to be feasible [*feasibility*], the other essential functions (i.e. resourcing, sanctioning, organising and regulating) all needed to be considered in terms of the feasibility of providing interpreting service delivery, as part of the contextualizing function.

Assessing whether the other functions could actually be carried out is in fact an important aspect of contextualising the interpreting service delivery process: it speaks to feasibility. It is found in other forms of service delivery, as even the key provisions of the South African Constitution are given with the proviso “should funds be available”. The feasibility of providing interpreting service delivery clearly needed to be reflected in the empirical model by including a consideration of whether:

- resources were available
- the necessary organisation could be provided
- service delivery would be sanctioned, and
- the service could be satisfactorily regulated.

Considering the context and participants would establish the need for an interpreting service. However, in retrospect, “need” could be seen to be balanced out by “feasibility”. This was experienced personally by the

researcher when she tried to introduce a much-needed interpreting service at DUT earlier. At the time, lack of equipment made this not a feasible option,

Table 5.1 The refined empirical model of interpreting service delivery

ESSENTIAL FUNCTIONS		EMPIRICAL MODEL OF interpreting service delivery
1.	Contextual	Contextualising service delivery is achieved by balancing needs and feasibility. Needs analysis: Considering the context, participants and purpose establishes the mode or type of interpreting service needed. Feasibility: Assessing the feasibility of providing such a service is achieved by a consideration of whether/how the other four functions can be carried out.
2.	Sanctioning	Interpreting is sanctioned by participants and authorities (e.g. according to government and provincial policies, institutional policies, agreement of CEOs, and agreement of clients.)
3.	Resourcing	Funds, infrastructure, service providers (i.e. staff, and training) and equipment, transport and venues are used in implementation.
4.	Organising	The interpreting process is organised so that it follows a smooth procedure which does not interfere with or intrude unnecessarily on the communicative interaction.
5.	Regulatory	Interpreting is regulated by means of monitoring, codes of conduct, provisions of institutional policies (including quality policies) and mechanisms providing feedback from clients and service providers.

and DUT Management had not yet committed itself to the SANTED Project, which would later make funding available. Another example can be found in providing an interpreting service for the *FAD Conference 2009*, where lack of university staff and students, as well as funding to provide freelancers, prevented coverage of the whole conference. These insights contributed to modifying the empirical model, as shown in the “refined empirical model of interpreting service delivery” (see Table 5.1, where the changes are highlighted).

b. Inclusion of an additional essential function

A consideration of Verhoef’s “Processes according to which service delivery is organised and the respective associated subsets” (2010:60-61) suggested the inclusion of an additional essential function “without which” interpreting service delivery cannot take place (or at least, take place effectively). As mentioned earlier, the need for the interpreting service to be well **organised** is stressed in Verhoef’s quality assessment table (28 entries in just under 50 sets). While the essential functions are not a process model, Verhoef’s “processes” did play a part in refining it, by suggesting the inclusion of “organising” as a another essential function “without which” the mechanism of interpreting service delivery could not take place.

c. Inclusion of an “input” option

In retrospect, one aspect of the empirical model was seen to be missing after reflecting on its application at DUT. This aspect was included implicitly and intuitively, but it is such an important aspect that the model needed to be

further adjusted to make it explicit. It is the issue of contingent factors impacting on the interpreting service delivery process. For example, if the DUT Vice Chancellor, Professor Roy du Pré, had not at that particular period of time chosen to support the introduction of interpreting service delivery by authorising access to funding and by sanctioning the process as a recognised and valued university activity, the introduction of interpreting service delivery at DUT would have been delayed, and might possibly have been stalled indefinitely. This is a contingent variable which not only impacted on the DUT university applications described in this chapter, but on future applications, as the necessary equipment is a prerequisite for interpreting service delivery, which must be *resourced*.

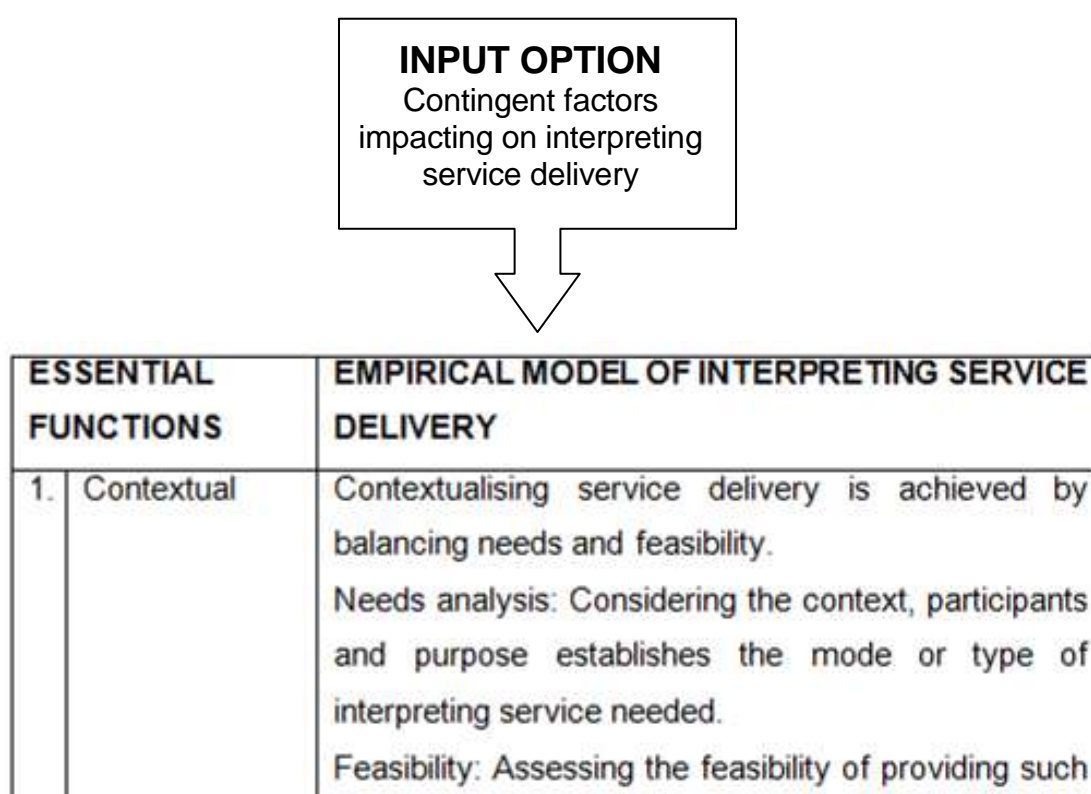


Figure 5.5 Input option added to the empirical model of interpreting service delivery

As mentioned above, the fact that DUT has seven campuses, some over 90km away from the Durban campuses, has potential impact when it comes to achieving all five functions satisfactorily. In 2.3 above, it was stated that the researcher would “identify the commonalities and variables” in a given social practice. Including an input option (as in Figure 5.1) in the model accommodates the variables in interpreting service delivery which might impact on the carrying out of any - or all - of the essential functions needed to interpreting service delivery to take place.

It must also be noted that performance of the various interpreting service delivery functions might be affected not only by contingent factors impinging on them, but also by performance of some of the other functions themselves. For example, if sufficient resources are not available to buy the necessary equipment or hire enough interpreters (resourcing function), quality may suffer as a result and in ways which cannot be fixed even with the requisite feedback (regulatory function). Finally, while the functions are numbered in Table 5.1, and roughly in the order in which they are thought to occur in real-life applications, this is not meant to suggest a neat sequence or a case of “interpreting service delivery by numbers”. Figure 5.1, which shows the functions contributing to interpreting service delivery, provides better conceptualising of the model. The functions could in fact be effected in different permutations and combinations, with stages recurring any number of times (i.e. the functions are recursive).

5.3.2 Validation of the theoretical model

As mentioned, above, the theoretical model is validated in terms of its match with the empirical model. As the empirical model was - and still is - based on the system of functions comprising the theoretical model, and these essential functions were those which were seen to be carried out in the implementing of interpreting service delivery at DUT, the theoretical model has been validated.

5.3.3 The generalisability of the theoretical model

This refers to the extent to which the theoretical model of interpreting service delivery can be viewed as a generalisable principle for social service delivery. At this stage it can only be suggested that the system of functions might be considered in the light of a generalisable **principle** for other forms of social service delivery. This is because, when working out the functions, reference to other forms of service delivery helped to establish what the functions might be. For example, service delivery in diverse social systems such as Health, Housing, Education and Transport can be seen to need contextualising, sanctioning, resourcing, organising and regulating. The fact that many of these functions are clearly not seen to be carried out in service delivery in South Africa, in particular, might explain the growing dissatisfaction of communities and the increased number of public demonstrations to this effect.

Public protests have escalated to the extent where a "national stage of emergency on local government" has been suggested by Sicelo Shiceka (then) Minister for Cooperative Governance and Traditional Affairs:

Many reasons for these protests are offered. The primary reason, it would appear, is dissatisfaction with the delivery of basic municipal services such as running water, electricity and toilets, especially in informal settlements. Unemployment (officially at around 23%), high levels of poverty, poor infrastructure, and the lack of houses add to the growing dissatisfaction in these and other poor communities. This comes in the wake of political promises during the election period that all or most of these issues will be addressed once the new government is in place. According to some protesters this has been a recurring theme with every elections since 1994 (Burger 2009: : para 2).

A case in point is the recent furore over poor service delivery in construction, including provisions of Reconstruction and Development Programme (RDP) for housing and schools where failure to vet service providers (**sanctioning** function) and careless organisation (**organising** function) as well as non-existent quality control (**regulating** function) resulted in shoddy workmanship. This meant that dwellings had to be repaired at considerable extra expense (Padayachee & Da Costa 2010). More attention to sanctioning in particular would have required the original builders to be fined or to be obliged to redo the shoddy work, and more rigorous monitoring (i.e. by Inspectors or government officials) might have brought service delivery back on track before it had deteriorated to the extent where the expense of setting things right became prohibitive (so that it was stalled through lack of **resourcing**). It has also become apparent that many municipalities lack competent managers who are able to conceptualise and plan housing service delivery in advance (**contextual** function). However, in the case of the theoretical model of interpreting service delivery being used in other areas of social service delivery, the empirical model would need to be adjusted to reflect the particular nature, scope and operational features of that service.

The contextual function is crucial in order for the interpreting service delivery to be operational in any given situation as in the case of housing. For instance, although the need to provide interpreting service delivery at DUT was established by the researcher as well as other staff members, it was not possible to implement it for some time. Various means were tried, such as meetings being initiated at departmental level, but initially with no results. The legacy of the merger led to instability at both executive management level and in the DUT Council. Eventually an Administrator, Professor Jonathan Jansen, was appointed by the then Minister of Education, Professor Naledi Pandor, in order to try to bring stability to the university. Once the council was approved, executive management positions had to be filled, and this occurred in stages, being a drawn out process with many acting appointments, where appointees were reluctant to make crucial decisions. Once the newly appointed executive management and the newly constituted Council were in office, the DUT policies, including the language policy were reviewed. Up until then, the lack of an approved language policy which might support multilingualism, as indicated earlier, meant that anything pertaining to language, including interpreting service delivery, had been shelved.

Another dimension which was a result of instability in the management of the university was the university restructuring which led to the merging of academic departments. The department which was best able to drive the language policy formulation, Language and Translation, was relegated to programme status, with a subsequent shift in status of the headship. The merged department, now “Media, Language and Communication”, had rapid

and frequent changes in leadership, which resulted in the morale of the language specialist staff being low. As a result, they were not able to focus on the language policy process so that interpreting service delivery could be fully implemented. It was only when the newly appointed Vice Chancellor, Professor Roy du Pré, saw an urgent need for an interpreting service at DUT, that interpreting service delivery was seen in the context of the academic landscape, and thus an essential service needed for DUT.

The availability of resources, another essential function for any service to be implemented, is also crucial, as shown on the housing service delivery in South Africa. Service delivery at DUT is no different from any other type of service delivery in requiring resources for implementation. Financial, human and infrastructural resources are crucial for interpreting service delivery. All too often in the past language staff have been called upon to find - and implement - solutions to effective communication for the multicultural DUT staff and students in addition to their usual lecturing duties (usually quite heavy in Language programmes). The researcher initially had to source funds to run pilot studies through the SANTED Project. It was only when the SANTED Project was fully implemented that the Vice Chancellor at the time, Professor Roy du Pré became supportive of the implementation of the interpreting service delivery by making the necessary resources available to purchase the necessary equipment, which was first used in DUT graduation ceremonies. He not only provided the resources, but publicly elevated the status of multilingualism in one of the most important public functions of the university, the graduation ceremony. The Vice Chancellor also made a point of

announcing the availability of the service at the actual ceremony. The service was thus “sanctioned” as an integral part of university life.

5.4 Conclusion

This chapter focused on the application of the model as applied to the interpreting services offered at DUT. The interpreting service model was applied firstly during some of the Dental Assisting lectures, secondly during the DUT graduation ceremonies, thirdly during the 2009 Faculty of Arts and Design (FAD) Conference, and, lastly, during some of the disciplinary hearings at the university. This application in various university contexts at DUT enabled the empirical model to be validated, with some slight modifications. The application at DUT also suggested that an input option should be added to explain how contingent factors might impact on interpreting service delivery. The chapter concluded with the suggestion that the theoretical model might be generalisable in terms of being applicable to other types of service delivery.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter will assess the extent to which the aims and objectives of the study were achieved. After carrying out a critique, it will make recommendations for further applications and research.

6.2 The extent to which the aims and objectives were achieved

A critical realist approach was adopted in this study, with the overall aim being to promote multilingualism at DUT by providing an interpreting service for various aspects of university life.

The specific research objectives were as follows:

1. to develop a socially-based model of interpreting services which:
 - a. describes the common factors involved, and
 - b. makes provision for specific application in different contexts.
2. to show how this model could be applied at DUT to address specific interpreting requirements.

The modelling process followed Franck's modelling process (2002: 295) in establishing the property of the social system using data from the literature and field work at various universities, the property of implementing an interpreting service being that is constituted a type of service. Next the essential functions for interpreting service delivery (interpreting service delivery) were identified as contextual, sanctioning, resourcing, organising and regulatory functions: in retrospect these could be found in the data from the field trips. The practical means of carrying out these functions was then expressed in an empirical or "applied" model. The theoretical model and the empirical model constituted the formal and applied aspects of the social mechanism involved in interpreting service delivery. The empirical model was tested out by observing and documenting its relevance in the implementation of interpreting service delivery in various contexts at a multilingual university, namely DUT, and was found mainly to "fit" actual implementation of the service. However, certain modifications were suggested by both the model's application at DUT and a further perusal of relevant readings, particularly Kalina (2002; 2005; 2007) and Verhoef (2010c). The model was validated in terms of its "fit" to implementing interpreting service delivery at DUT. In terms of the brief, the aims and specific objectives of the study were achieved.

6.3 A critique of the modelling process

It must be conceded that the model was only partially validated inasmuch as its application at DUT was involved. However, the brief was to introduce interpreting service delivery at DUT, and the fact that the model could be seen to be relevant for interpreting service delivery at other universities visited was

over and above the brief, as was the apparent “fit” of the principle in the theoretical model to other areas of service delivery.

If the model had been formulated before the field trips, more (and more detailed) confirmatory data could have been collected. However, that is the problem with this kind of modelling, which is a recursive process: the researcher needs a framework to gather data, but the conceptual framework often crystallises only after the data is collected. The pilot study is now “paused”¹² except for translation in certain sectors, so that it is not possible to gather further data or consolidate findings until the service is more fully implemented.

An advantage is thought to lie in the practical nature of the model, which is easily understood by non-academic practitioners, clients and lay people such as administrators. It was considered that the empirical model could be elaborated on more, for example, with checklists and procedures, but it was also thought that these might more properly be left for local application so that they might be context specific (“data sheets” are not strictly models, although they might be based on models). A manual is currently being drafted to give more specific guidance to other universities that wish to implement interpreting service delivery.

¹² The pilot study is “paused” owing to changes in DUT executive management.

There is still much work to be done in applying the model of interpreting service delivery at DUT. Currently implementation is suspended, with a new round of negotiations about to begin to establish sanctioning (i.e. by the new VC) and provide further resources. In terms of the validation of the model, the very real object lesson that interpreting service delivery cannot continue at DUT without these two functions being carried out adds further evidence to arguing my case for the model. However, transformation in the direction of multilingualism is still going ahead with the translations of Council communiqués and running of lessons in isiZulu for staff.

6.4 Recommendations for further application and research

In general, while this study was considered to lie within the area of educational interpreting, it was thought that this area needed to be broadened to include interpreting in contexts other than classroom interpreting. This is, however, considered to be one of the problems with the current method of categorizing interpreting into types on the basis of context or purpose.

Further investigation into the following aspects is recommended:

- Further investigation (using the model of interpreting service delivery) is needed into how to sustain what the pilot studies started, particularly for classroom interpreting.
- Investigation is needed into other university contexts to see where interpreting/translating services are needed.

- As translation often complements interpreting (and vice versa), more research is needed into the reciprocal role played by translation in terms of promoting multilingualism.
- As the model is only partially validated in terms of applying to DUT and the universities visited, it needs testing out in different contexts.
- It is possible that various models of the interpreting process in the literature might be re-examined in terms of what functions they have in common with the system of functions in the model, or what functions they can be seen to perform, but this is whole area of study in itself.
- The mechanisms involved in the actual interpreting process itself could be explored, using Franck's (2002) model. The main advantages of this type of modelling are that it not only offers a means of integrating theory with actual practice, but can lead to the development of generalisable principles which can be applied in other contexts of fields. Using systemic modelling may be a way to deal with other aspects of the interpreting process which would result in models being practical as well as informed by theory.

Besides teaching/learning, the core business of a UoT is research and community engagement, and it is recommended that research is carried out to investigate the research needs for interpreting and translation in higher-degree research, particularly with respect to oral interactions in multicultural research groups and the composing of theses. As far as community engagement is involved, the following are recommended for DUT:

- The running of short courses for people who wish to be trained as interpreters (e.g. for court or community interpreting).
- The provision of interpreting services run by students, combined with research and work integrated learning (WIL).
- The provision of a quality interpreting/translation service for other DUT departments (e.g. Finance, HR).

6.5 Conclusion

In conclusion, the researcher found Interpreting to involve a huge area of intersecting approaches, fields and disciplines, which made it difficult to elicit the actual nature of interpreting from the work published on it. Developing a model of interpreting service delivery necessitated a consideration of the nature of the interpreting process itself, to which a variety of models in the field contributed. There is clearly a need for a broader model of the interpreting process (Pöchhacker 2005b), one which might show the nature of interpreting, as distinct from, for example, translating. Such a model might offer insights into mediated communication, and show how these insights can be applied in real life interpreting contexts. What I have gained from this study is the benefit of being exposed to some in-depth descriptions of the interpreting process which are extremely useful for practical application (e.g. Alexieva 1997; Mikkelsen 1999; Kalina 2007) and some intricate and complex theoretical accounts (e.g. Setton 2002). It is hoped that this study in some small way contributes to the field by attempting to link a very basic theory to actual interpreting practice.

APPENDIX A: CONSENT FORM

Consent Form/ Ifomu lokunika imvume

You may answer the questions in English or isiZulu/Ungaphendula
imibuzo ngesiNgisi noma ngesiZulu

Research conducted by R.L. Makhubu for the partial completion of the
DTech: Language Practice and for the SANTED Project./ Ucwango
olwenziwa ngu R.L. Makhubu ekuqedeleleni i-DTech: Language Practice
kanye ne-SANTED Project.

The study is conducted with the department of Dental Assisting at the
Durban University of Technology./Lolu cwango lwenziwa kanye
noMnyango we-Dental Assisting e-Durban University of Technology.

Do you allow me conduct this research with you? (Yes/No): _____

Uyanginika imvume yokuba ngenze lolu cwango nawe? (Yebo/Cha):

Do you understand that you are free to withdraw from this project at any time if
you so wish?

*Ingabe uyaqonda ukuthi ukhululekile ukuhoxa kulolu cwango noma nini uma
kunesidingo?*

Do I have your permission to publish the findings? (Yes/No): _____

Uyanginika imvume yokuba ngishicilele imiphumela? (Yebo/Cha): _____

Initials & Surname/Izinhlamvu & neSibongo

Signature/Sayinda

Thank you/Ngiyabonga

APPENDIX B: FOCUS GROUP DISCUSSION

Research conducted by R.L. Makhubu for the partial completion of the DTech: Language Practice and for the SANTED Project

The study is conducted with the department of Dental Assisting at the Durban University of Technology.

Focus groups discussions – Staff

1. Are you aware of the interpreting service that is to be provided during the lectures?
2. Do you know what is interpreting? If yes, give your view of what interpreting is.
3. Can you differentiate between interpreting and translation? Elaborate.
4. Do you know what simultaneous interpreting is? If yes give your view on what it is.
5. Can you differentiate between simultaneous and consecutive interpreting?
6. What are your expectations on the provision of the interpreting service during lectures?
7. What are the concerns that you have regarding the provision of interpreting service during the lectures?
8. Is there anything else you would like to add or comment on?

Thank you for your time.

NB: The lecturer speaks English only; hence the questions are posed in English.

Research conducted by R.L. Makhubu for the partial completion of the DTech: Language Practice and the SANTED Project

The study is conducted with the department of Dental Assisting at the Durban University of Technology.

Focus groups discussions – Students (Group A)

1. Are you aware of the interpreting service that is to be provided during the lectures?
2. Do you know what is interpreting? If yes, give your view of what interpreting is.
3. Can you differentiate between interpreting and translation? If yes, elaborate.
4. Do you know what simultaneous interpreting is? If yes give your view on what it is.
5. Can you differentiate between simultaneous and consecutive interpreting?
6. What are your expectations on the provision of the interpreting service during lectures?
7. What are the concerns that you have regarding the provision of interpreting service during the lectures?
8. Is there anything else you would like to add or comment on?

Thank you for your time.

- NB:**
1. The students are made aware of either to be asked in English or isiZulu
 2. Students are given a choice to respond in English or isiZulu

APPENDIX C: DENTAL ASSISTING QUESTIONNAIRE

INTERPRETING SERVICE / UKUTOLIKA

FEBRUARY – MARCH 2008/KUNHLOLANJA-KUNDASA 2008

QUESTIONNAIRE / UHLA LWEMIBUZO:

END-USERS / OKUSETSHENZISELWA BONA

You may answer the questions in English or isiZulu/Ungaphendula imibuzo ngesiNgisi noma ngesiZulu

The aim with this questionnaire is to find out what you think of the use of simultaneous interpreting for teaching-learning purposes. / *Inhloso yale mibuzo ukuthola ukuthi ucabangani ngokusetshenziswa kokutolika ngemishini uma kufundiswa-kufundwa.*

SECTION / ISIGABA 1: BIOGRAPHIC INFORMATION / ULWAZI NGawe

1.1 Make a tick in the appropriate block / Faka uphawu ebhokisini elifanele

Male/ <i>Isilisa</i>	1
Female/ <i>Isifazane</i>	2

1.2 What language or languages do you speak at home?

/ *Ukhuluma luphi ulimi /ziphi izilimi ekhaya?*

--

1.3 For what course are you enrolled? / *Ubhalisele ukufundani?*

--

SECTION / ISIGABA 2 : INTERPRETING AND THE FACILITATION OF TEACHING AND LEARNING / UKUTOLIKA KANYE NOKWENGAMELA UKUFUNDISA NOKUFUNDA

Read the following statements and make a cross in the block that represents your feeling to the best:

Funda lokhu okubhalwe ngezansi bese ufaka uphawu ebhokisini obona ukuthi uvumelana nalokho okushiwo:

- 2.1 I find it easy to attend the class presented in one language, **listen to the interpreting in the other language**, make study notes and interact with the study material

*Ngikuthola kulula ukuya ekilasini elifundiswa ngolimi olulodwa, **ngilalele uma kutolikwa ngolunye ulimi**, ngibhale amanothi ngiphinde ngiebambe ekufundeni.*

I do not experience any problems / <i>Anginanking a</i>	I can follow explanations sufficiently / <i>Ngiyakulandel a konke okuchazwayo</i>	I am able to get a fair grasp of the content / <i>Ngiyakuzwa kancane lokho okufundiswayo</i>	Sometime s I find it difficult / <i>Ngesinye isikhathi ngikuthola kunzima</i>	I find it difficult / <i>Ngikuthol a kunzima</i>	I cannot cope at all / <i>Ngingekwa zi ukukumela lokhu</i>
1	2	3	4	5	6

- 2.2 The interpreting bothers me
Ukutolika kuyangihlupha

Not at all / <i>Nakancane</i>	Not really / <i>Hhayi kahle hle</i>	To a lesser extent / <i>Kancane kakhulu</i>	To a certain extent / <i>Kancane nje</i>	I find it disturbing / <i>Kuyangiphazamisa</i>	I find it unacceptable / <i>Akwamukelekile neze</i>
1	2	3	4	5	6

- 2.3 I think interpreting is a viable solution to manage the needs of different language groups at the university

Ngicabanga ukuthi ukutolika kungaba yisixazululo esingasebenza ekulawuleni izidingo zezilimi ezahlukene enyuvesi.

I agree/ <i>Ngiyavuma</i>	Yes, but... / <i>Yebo, kodwa ...</i>	I have my doubts / <i>Nginokungabaza</i>	I do not agree / <i>Angivumelani nakho</i>
1	2	3	4

2.4 Provide brief reasons to motivate. Use the space provided to explain.

Nika izizathu ezimbalwa zokucacisa. Sebenzisa lesi sikhala esinikeziwe ukuchaza.

2.5 Use the space below to bring other issues regarding the interpreting project to the attention of the project organisers.

Sebenzisa lesi sikhala ukwazisa abahleli be bephrojekthi yokutolika ngezindaba ezimayelana nokutolika.

APPENDIX D: GRADUATION QUESTIONNAIRE

INTERPRETING SERVICE / UKUTOLIKA

APRIL 2009/KUMBASA 2009

QUESTIONNAIRE / UHLA LWEMIBUZO:

END-USERS / OKUSETSHENZISELWA BONA

You may answer the questions in English or isiZulu/Ungaphendula imibuzo ngesiNgisi noma ngesiZulu

The aim with this questionnaire is to find out what you think of the use of simultaneous interpreting during the graduation ceremony at the university. / *Inhloso yale mibuzo ukuthola ukuthi ucabangani ngokusetshenziswa kokutolika ngemishini uma kwethweswa iziqu enyuvesi.*

SECTION / ISIGABA 1: BIOGRAPHIC INFORMATION / ULWAZI NGAWU

1.1 Make a tick in the appropriate block / *Faka uphawu ebhokisini elifanele*

Male/Isilisa	1
Female/Isifazane	2

1.2 What language or languages do you speak at home?

/ *Ukhuluma luphi ulimi /ziphi izilimi ekhaya?*

--

1.3 For what course were you or the person you came to watch enrolled?

/ *Wawubhalisele ukufundani noma lowo ozombuka?*

--

SECTION //SIGABA 2: INTERPRETING SERVICE PROVIDED DURING THE GRADUATION / UKUTOLIKA UMA KWETHWESWA IZIKU

Read the following statements and make a cross in the block that represents your feeling to the best:

Funda lokhu okubhalwe ngezansi bese ufaka uphawu ebhokisini obona ukuthi uvumelana nalokho okushiwo:

2.1 I find it easy to follow the proceedings presented in one language and also **listen to the interpreting in the other language.**

Ngikuthola kulula ukulalandela okukhulunywayo ngolimi olulodwa, ngiphinde ngilalele uma kutolikwa ngolunye ulimi.

I do not experience any problems / <i>Anginanking a</i>	I can follow explanations sufficiently / <i>Ngiyakulandela konke okuchazwayo</i>	I am able to get a fair grasp of the content / <i>Ngiyakuzwa kancane lokho okufundiswayo</i>	Sometimes I find it difficult / <i>Ngesinye isikhathi ngikuthola kunzima</i>	I find it difficult / <i>Ngikuthola kunzima</i>	I cannot cope at all / <i>Ngingekwazi ukukumela lokhu</i>
1	2	3	4	5	6

2.3 The interpreting bothers me
Ukutolika kuyangihlupha

Not at all / <i>Nakancane</i>	Not really / <i>Hhayi kahle hle</i>	To a lesser extent / <i>Kancane kakhulu</i>	To a certain extent / <i>Kancane nje</i>	I find it disturbing / <i>Kuyangiphazamisa</i>	I find it unacceptable / <i>Akwamukelekile neze</i>
1	2	3	4	5	6

2.3 I think interpreting is a viable solution to manage the needs of different language groups at the university

Ngicabanga ukuthi ukutolika kungaba yisixazululo esingasebenza ekulawuleni izidingo zezilimi ezahlukeneyo.

I agree/ <i>Ngiyavuma</i>	Yes, but... / <i>Yebo, kodwa ...</i>	I have my doubts / <i>Nginokungabaza</i>	I do not agree / <i>Angivumelani nakho</i>
1	2	3	4

2.4 Provide brief reasons to motivate. Use the space provided to explain.

Nika izizathu ezimbalwa zokucacisa. Sebenzisa lesi sikhala esinikeziwe ukuchaza.

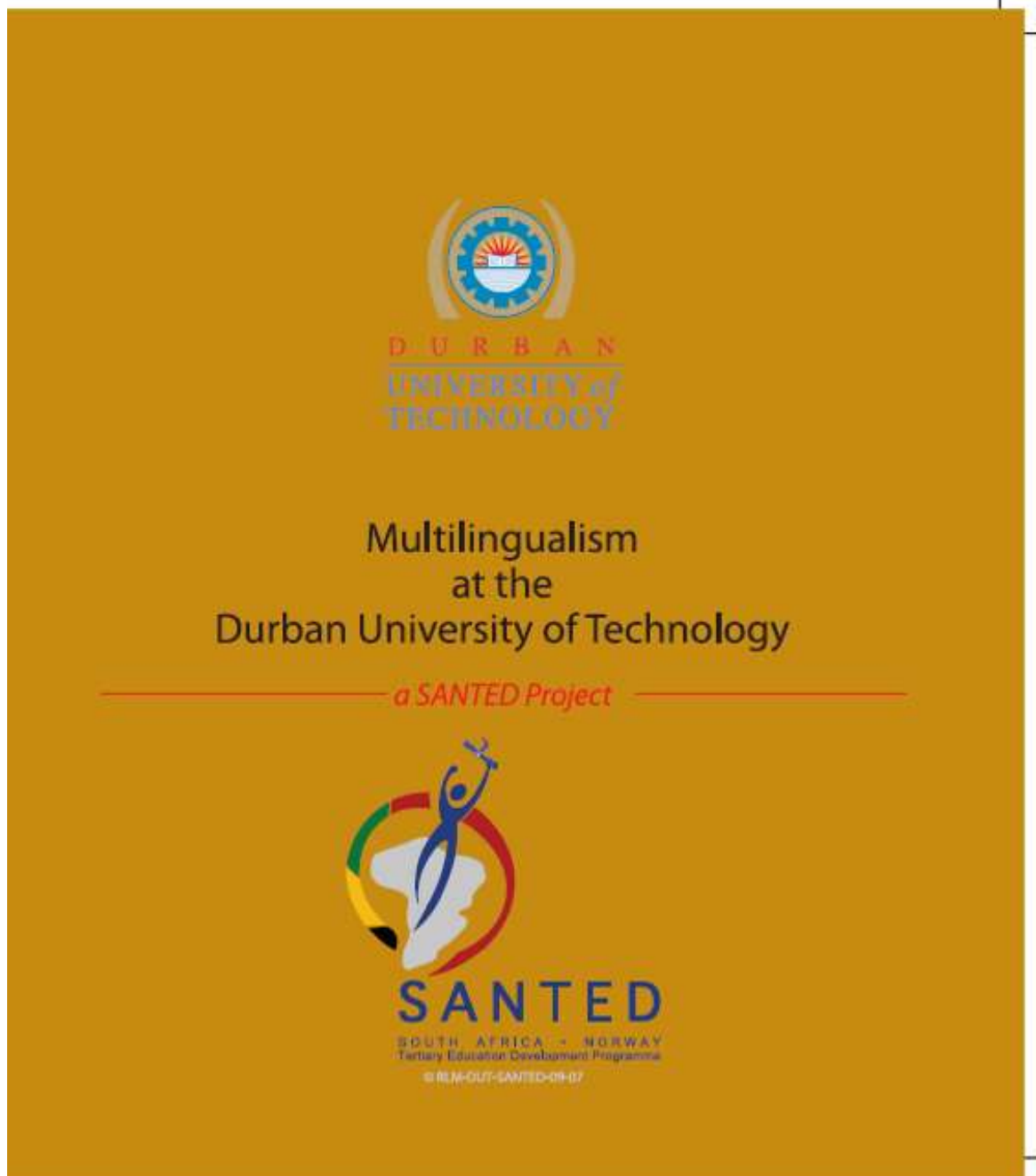
2.5 Use the space below to bring other issues regarding the interpreting project to the attention of the project organisers.

Sebenzisa lesi sikhala ukwazisa abahleli be bephrojekthi yokutolika ngezindaba ezimayelana nokutolika.

Thank you for participating in this research.
Siyabonga ngokubamba iqhaza kulolu cwango.

APPENDIX E: SANTED PROJECT OVERVIEW

The following in-house publication gives an overview of the SANTED Project.



Compiled by:



Lolie Makhubu

Co-ordinator: DUT- SANTED HOD: Language & Translation
Durban University of Technology

Multilingualism at the Durban University of Technology a SANTE Project

Background

The Departments of Dental Assisting and Language & Translation at the Durban University of Technology (DUT) are participating in a SANTE Project, together with the University of KwaZulu-Natal. The Project at DUT was initiated by Ms R.L. Makhubu, the co-ordinator, who is from the department of Language & Translation and Dr L. Samuels (originally the HOD) from the Department of Dental Assisting and Mr T. A. Muslim who is the Programme Co-ordinator. The

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main aim of the project is the furtherance of multilingualism in Higher Education Institutions (HEI) in South Africa. The Durban University of Technology (DUT) as well as the University of KwaZulu-Natal (UKZN) developed a joint proposal which was successful. There are four partners between the two universities, and Dental Assisting at DUT is one of them. The duration of the project is three years, commencing in 2007 and finishing in 2009.

Teaching/Learning

The staff members in the department of Dental Assisting are learning Basic Communicative isiZulu

(Siyakhuluma Course) in order to improve communication with the learners, who are predominantly isiZulu speaking. The Siyakhuluma Course was designed, and then approved by Senex in May 2007, and is offered by the facilitators who were trained during the first semester through the department of Language & Translation. Over and above this, some lectures on Mental Assisting are interpreted into isiZulu, which would enable the learners to better understand the concepts in their first language. The interpreters were trained by Mr J. Blaauw from the North-West University (N-WU) and Ms R.L. Makhubu from DUT in the Interpreting Laboratory of the Department of Language & Translation. Some lecture notes have already been

translated into isiZulu for better facilitation of the teaching/learning process.

Research

The isiZulu terminology on Dental Assisting was researched, developed and translated by the isiZulu Language Research and Development Centre (LRDC) which is based at the University of Zululand (UNIZUL). The LRDC conducted some workshops on several occasions to authenticate the terminology. The students from the Dental Assisting department have already "approved" the isiZulu terminology.

Ms R.L. Makhubu already presented a paper at the Conference in the North-West University on "Ukutolika ekufundisweni Kwe-Dental Assisting e-DUT" which is "Provision of Interpreting Services for the Offering of Dental Assisting at DUT". The conference was organised jointly by the LSSA, SAALA and SAALT on the 4-6 of July 2007. The paper was delivered in isiZulu, and simultaneous interpreting was provided into English for the audience. The paper is currently being developed into a manuscript for the publication. Another presentation was be done at the Faculty of Arts & Design Research Day on the 19th of September 2007, at DUT. Ms Makhubu is currently developing a poster which is to be presented at an international

conference. Another research project completed is the compilation of a bilingual booklet on Dental Assisting.

Community Service and/or Prospects

It is envisaged that the trained interpreters on dental assisting would be able to provide such a service either in hospitals or private practices in a multilingual set up where interpreting services are required. The developed terminology would be widely distributed in KZN or even nationally. Lastly the translated lecture notes would assist current Dental Assisting practitioners who are in multilingual environments

Conclusion

It is hoped that the pilot project on multilingualism at DUT would be a success and that other departments would join in to further multilingualism at university level. Other universities, such as Rhodes, UJ and UWC are already ahead on furthering multilingualism at the institutions of higher learning.



Meeting with the Dental Assisting students and the staff members

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Training of the interpreters in the DUT Interpreting Laboratory

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Training of Siyakhuluma Course Facilitators & Learners

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Multilingualism at DUT - a SANTEd Project

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DUT-SANTED

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APPENDIX F: DENTAL ASSISTING TERMINOLOGY

The following in-house publications contain Parts 1-3 of the Dental Assisting terms compiled during the pilot project.

Part 1



Compiled by:



Lolie Makhubu

Co-ordinator: DUT- SANTED HOD: Language & Translation
Durban University of Technology

Acid Etching	ukukhumbisa ngesisili
Active ingredient	isihloko esemangaka
Acute toxicity	ubuthixo bwenxaqo lbanagowane
Aerosol	ukufakwa kokungcola / ukufakwa kwamagowane
Allegory	ishizungu / okungamukelwa umzimba
Antimicrobial	obubibi magowane
Antimicrobial	ukububila amagowane
Antimicrobial agent	ishubili magowane / okububila amagowane
Antiseptic	isihlanisi magowane
Antiseptic properties	amandla okuthupaza amagowane
Applicator	insokegobisa / ishaphi
Aseptic technique	indlela yokusimbela / indlela yokungqanda / indlela yokuvutha
Astringent	isihlanisi magowane/ isihluzubili magowane
Automated Instrumental Washers	imishini yokufiliza
Bacterial	amagowane
Bain (subulab) method	indlela yilina
Bicarbonate of soda	ibhaykhatrooda
Binders	isihlanganis
Binders Humectants	isihloko sokuhlanganisa
Bioburden	ubungqalo / umthamo/zinga lamagowane
Biocidal	amandla okububila amagowane
Biocompatible	ishubili magowane eshizungu/ ishifing magowane
Biologic indicator	inombukulo kwamagowane
Biological monitors	inombukulo kwamagowane
Biphenol	ikhemikhali -biphenol
Bristle	ngamagqeni / aboya besukuthi
Broad spectrum	igqibo zonke
Cancer	isihwili magowane
Certainly lethal dose	isilinganis somzimba esibubila
Cetyl pyridinium chloride	ikhemikhali eminyango -Cetyl
Chain of Asepsis	inyathelo zokupheleka ukufiliza
Charter's method	indlela kaCharter

1

Check isolation	ukufikela ukubingana kwamanzi
Chemical indicator	inombukulo eyinikimikhali
Chemical monitors	
Chemical control	ukubingamisa
Chemotherapeutic agents	isihloko esingamathemikhali okwelokha
Chewel	okubafunwa
Chlohexidine gluconate	ikhemikhali -gluconate
Chronic toxicity	ubuthixo obuyintleleleleli/ ubuthixo obungqheleli
Cleaning and	
Polishing agents	isihloko zokufiliza nokucwecwecelisa
Clinical	umabonisi waseempilumlingi wemagqabi
Colonying agents	isihloko zombala
Contaminated waste	okungqobila / ngokubeyokungqobila
Contamination	ukutholekela ngokungqobila
Corrosive	ukutholekela kweminyo
Cosmetic	ukubikela
Critical items	isinxeba kwelimo esinobungqeni eminyango
Cross-contamination	ukutholekela ngokungqobila
Debris	okungqobila (eminyango)
Decayed	-bottle (inyo) okubila
Decontamination	ukuthuvaza / ukuthemamandla / ukufiliza amagowane
Dewo grooves	amandaba / amagqabi (amanyaweni)
Demerolubation	ukukhumbisa umpho
Dental traffic	okungqobila / ukungqobela emashinyweni
Dental fluorosis	ukugqobila kwamazinyo
Dentifrice	umuthi wokuqubha
Denture	amagqonombuthuko
Delegem	isihlanisi
Diastema	isinxeba
Diffusibility	ukusatshela
Disinfecting agents	isihloko okuyinkqubo magowane
Disinfection	ukuthuvaza / ukububila / ukufiliza amagowane
Disposable brush	ibhushu elibonakalisa kanye / ishaphi elilindekayo

3

Dimple	isinxeba / isinxeba
Dry heat sterilization	isibubila magowane esiwumhlanganis
Dysphagia	-dysphagia
Embaseure	isibubila amagowane
Enamel	ugqwephe lwashyamba
Endemulsi agent	isinxeba
Eruption	ukuphuma / ukumelwa
Erythema	-erythema
Etching	ukukhumbisa (amagqabi)
Ethyl alcohol	ukuthupha okubizwa ngokuthi
Ethylene oxide	isixi -ethylene
Filament	ingqungqisi / uboya besukuthi
Filled teeth	amagqabi agqibizwe
Fluor	umagqabi / imibobo
Fluore sealants	okugqobila amagqabi
Fluouring agents	isihloko esemangaka
Fluoride	ukukungqobila ngokuthi / ukukungqobila ngokuthi
Fluorocoin	ikhemikhali -fluorocoin
Fluoride	ikhemikhali -fluoride
Fluoridation	ukubika -fluoride
Fluoride varnish	upende one-fluoride wokuwebekelisa
Fores Method	indlela kaFore yokusutha
Fucitons	isinxeba eseminyango yamazinyo
Gels	amagqabi / isinxeba
General waste	imfucuzo
Gleostol	-Gleostol
Gingiva	isinxeba
Gingival inflammation	ukukhumbisa kwesinxeba
Gingival tissue	ukukhumbisa kwesinxeba
Gingivitis	ukukhumbisa kwesinxeba
Glycidoldehyde	ikhemikhali -glycidoldehyde
Glycidol	ikhemikhali -glycidol
Gauze	igqabi / ingqubo
Glycoline	ukutholekela uboya / isinxeba

3

Halitosis plaque	isinxeba kwelimo omakayo / isinxeba kwelimo omakayo
Harshness water	inkqubo eminyango
Heating solution	umthetho ngokuthi okububila amagowane
Horizontal scrub	ukutholekela ngokungqobila / ukutholekela ngokungqobila
Hot lead or salt	
Hydrocol	ukutholekela ngokungqobila
Hypersensitivity	ikhemikhali -hypersensitivity
Incision	ukugqobila kwelimo
Infection	amazinyo angagqibizwe
Infection control	ukutholekela
Infectious or regulares water (Bottled water)	okungqobila okubizwa ngokuthi / Okungqobila okubizwa ngokuthi
Infectious waste	okungqobila okubizwa ngokuthi / Okungqobila okubizwa ngokuthi
Inhalation	ukubizwa umoya / ukubizwa
Intensity	okumamandla
Inspection	ukubizwa
Iodophor	ikhemikhali -iodophor
Ions	isinxeba
Irrigation	ukufiliza / ukufiliza
Isolation	ukuthuvaza
Labeling	ukubizwa umphawu / ukubizwa
Leonards Method	indlela ka-Leonard yokusutha
Lesion	isinxeba
Lignocaine	ukugqobila ngokuthi
Material alloy	okungqobila eminyango
Mechanically	ikhemikhali -mechanically
Micro organisms	amagowane
Microbial transmission	ukutholekela kwamagowane
Mixture contamination	umthetho kwelimo
Molar	amazinyo emilimbi
Morquet	amazinyo
Mordant enamel	okugqobila kwamazinyo

4

Mouthpiece	umuthi wedipakasa umlomo / ukupakasa umlomo / ukusutha
Mucous membrane	ukwazi lomlomo
Multistated	izingangqale isivichobekene
Noncarcinogenic sweetener	ukhusha ongabisi amangqo
Non-critical items	imisekelaqatima engemazungat
Occlusion	indlela yokuma kwamaqam
Oocyte	okubonakala ngile
Operative	umsebenzi wesempilo
Opportunistic pathogen	amagqawane angqamothuba
Oral irrigation	ukufakisa / ukusutha eminyemini
Orthodontic	ukuphatha amangqo
Over gloves (large gloves)	amagqawane agqawane ngaphisa kwamaqam
Overtenture	inqokole emntu amangqamobumba
Packaging	ukubekela
Pavon	qheya
Periodontal therapy	ukwelapha isintu / ukwelapha kwesintu
Permanent teeth	amangqo okubisi / amangqo okubisi
Phenolic compounds	ikhemikhali ephenolic compounds
Thymol	ikhemikhali ephenolic
Phosids	ikhemikhali ephenolic
Phosphate	ikhemikhali ephosphoric
Phosphoric acid	ikhemikhali ephosphoric acid
Pits	imphobo zemvelo
Plaque	amagqawane emangqaweni
Proceptive effects	okugqibizayo emva kokugqawana
Probers	uphuhlisa / uphuhlisa
Pre-emptive effects	okugqibizayo ngaphambi kokugqawana
Prevalence	amangqo omabini
Preventives	utshale zokuvimbela ukuvimbela
Preventive	ukuvimbela
Quaternary ammonium compounds	ikhemikhali e-quaternary ammonium compounds
Radiation therapy	ukwelapha ngokwayo
Rampant caries	ukwelapha kokubisi

2

Radiation	indlela yokusutha ngokugqibizayo
Rat surface	ingaphandle lomlomo wathayi
Saliva	amatho
Salivary	okumatho
Salivary glands	imango yokuhleza
Self-cured	okugqibizayo
Semioctical item	imisekelaqatima engqale nobungat eminyemini
Shallow pocket	imigat yemvelo engqale
Sharp	okubonakala
Sodium benzoate	ikhemikhali e-sodium benzoate
Sodium fluoride	ikhemikhali e-sodium fluoride
Sodium hypochlorite	ikhemikhali e-sodium hypochlorite
Spitula	isputula
Spitler	ukuchitha
Spillage	ukuchitha / ukusaphazeka
Stain	ibala
Standard precautions	indlela emisebenzi yokugqibizayo / indlela emisebenzi yokugqibizayo
Stat (statim) ordered dose	izingangqale somsebenzi esamilekile
Sterile surgical gloves	amagqawane avilekile emagqaweni
Stimulation	indlela yokubiza amagqawane
Stimulant method	indlela yokubiza amagqawane
Sweetening agent	utshale okugqibizayo
Synthes	ukupakasa umlomo
Systemic fluoride	ukusobana kwe-fluoride emantlweni
Taste	ukusobana
Teeth	amangqo
Therapeutic	ukwelapha
Therapeutic agent	okwelapha
Thymaine	imisekelaqatima e-thymaine
Tinted	ukugqibizayo kumbala
Tongue	ulimi
Tooth	imango
Toothbrush	ibutho

3

Toothpaste	umuthi wokusutha
Topical fluoride	ukufakisa ephakathi amangqaweni
Ultrasonic Handwashing method	indlela e-wayikile yokugqawana isandla
Tuft	isibindi sempingqisi
Ultrasonic cleaner	umatho wokuhleza kwamaqam
Universal precautions	indlela engqibizayo yokugqibizayo / indlela engqibizayo yokugqibizayo
Utility gloves	amagqawane okubonakala ngile (okubonakala, nuthu)
Waste management	ukusaphazeka / ukusaphazeka kwamaqam
Widom	dumba
Xerostomia	umfomo owazi

4

NOTES

5

PART 2

Edited & Collected by:



Lole Makhubu

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Language & Translation:

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Dental Assisting:

Mr T.A. Musini



SANTED TERMINOLOGY PROJECT

Dental Assisting Terms - Part 2
Amatemu akwa-Dental Assisting - Ingxenye 2



English	IsiZulu
Abnormal cell formation:	ukwehuka kweziqubane ngendle engajoyinikele
Acetic acid (acetifier):	isithelo ukusuka-asi eyisitho abuyayo bukhulu
Acid fissure:	ukumandla k-asi
Acidogenic:	okubala ukwehuka kwe-asi
Added filtration:	ukwenza okawetha insaba yabandakanya
Adhesive:	isamathela
A dryer:	isemisi
Adjust headrest:	ukumisa ngendle oyifunayo okutondisa ibhanti
Aerosols of respiratory fluids:	ukutwaka kokungqola
Ala of nose:	isigqo lesidlo
Ala-tragus line:	umugqa osuka endlebezi uye ekhaleni
Aluminium disk:	amadiski e-aluminiyamu
Aluminium wedge filler:	isishi se-aluminium asedula insaba yabandakanya adingekayo
Alveolar bone:	ibhanti elibanda ibhanti
Alveolar crest:	isango sebhanti
Alveolar margin:	intlangathi sebhanti
Amalgam condensers:	ibhuti lokugatha isemende esutho
An activator:	ikhemikhali egqoka ukusabela kweminye
Anatomical detail:	ukuxela iinganyana zomzimba
Anatomical variations:	umehluko edinganyeni zomzimba
Anterior:	ngaphambili
Anterior film:	isithombe samandlalo angaphambili
Antrol disease:	isifo angulelile akuphatamula
Antrol turnout:	isigqo esilungilelile akuphatamula
Apex:	isango sebhanti
Appraisal of investment results:	ukubala isiphumeleli yabandakanya
Artificial saliva:	amathambulu
Asaptic procedures:	izindlela zokumibela
Atrophy:	ukungqha kwakinyama
Automatic processing:	ukusabela kwe-ekhothi okawetha umthetho
Avascularity:	ukumibela kwekhulu kwequtshelwano umzimba

Batter envelopes:	imvinyapho zokuvimba ukusabela kwemisebe
Bending:	ukugqokakabugoba
Biohazard waste:	ukungqala okubanga izifo
Biological effects:	imithethelaphumela yemisebe yokwagqha enzimbeleni
Bisecting the angle technique:	isixokepheleli esithethelaphumela somugqa phakathi kwesinye isifilimu ukusuka kutholakele isithombe elinye
Bite-wing film:	isithombe samazinyo omhlathi
Bite-block:	ingqubo elinye yisiguli egcina umlomo ovulekile
Blood charges:	ukufutshela kokwakheka kwegazi
Bone marrow:	umkhakha
Brain damage:	ukulimala kobuchopho
Buccal roots:	umkhakha ongaphakathi
Buccolingual dimension:	umoya/ weminyo phakathi kwemhlathi nomu
Buffering capability:	ukudambisa i-asidi
Bullers of energy:	ingqubo zamandla kagesi
Bundles of energy:	ingqubo zamandla kagesi
Calcification process:	ukwakheka amalahi e-calcium
Calibrating:	ukuphuhlisa ukusabela kwemhlathi
Cancer:	umkhakha
Carious:	amazinyo anjika
Celuloid:	ingqubo esemahla
Cement formation:	ukwakheka kokwebu elinene
Cementum:	uphephe oluqhele lwedinyo oluqhuba ngokuhlanyanyisi
Cephalometric radiography:	ukuthwalelwa kwesithombe sekhanda ngasemhlabathini
Cephalostat:	ukugcina ikhanda lingsipheki ngokusabela kwazo aphakama esithombeni
Cephalometric x-ray equipment:	ibhulazi le-ekseni yokuthwala uhlangatho lobuso
Certain tumors:	amithelo ezime ligase
Chain of infections:	uhungochunge kokuthwaleka
Chemical cross contamination:	ukugqoka kwekhemikhali ngokuthengana neliye
Chemical fumes:	izikhumba zamakhemikhali
Chemical radicals:	izithulo zamakhemikhali

2

Chemical strength:	amandla amakhemikhali
Chronic effect:	imithethelaphumela yemisebe yokwagqha angatapheki kakhulu
Cleft palate:	ukhala naphakathi nolwaga
Clinical procedure:	ingqubo yokwagqha
Clinical symptoms:	izimbombela ezibonakalayo
Corn:	ukupheka okhathi esdelaluko kwikhono
Compartment:	ingqubo
Cold sore:	isondo comshufane
Collimation:	ukugqala umzimba wemini esithombeni
Conception:	ukuhlelwa
Condyle:	ikhenkayi
Cone-cutting:	ingqubo yezinyo elithakile esithombeni
Congenital abnormality:	ukuthubazeka okuzalwa
Contaminated objects:	izinto ezingqokokele
Contact points:	igqo yokuthwala khona amazinyo
Control panel:	ukawulusebenza kwe-ekseni
Cornea:	intlobo eminyama yeyi
Cotton roll:	ovolo
Crack:	umfandu
Craniofacial:	ukugqoka ugqobhali hwekhanda lunganyakazi
Critical instrument:	ibhulazi elingama eminyo emihlanje negazi
Critical organs:	izinto zamandla adubulayo
Cysts:	izintshi
Daylight loading units:	imitheli engasibenza endle emhanyayo
Death:	ukufa
Densities:	ubugqirha
Dental assistant:	umntu kakhulu wamazinyo
Dental chair:	isithelo sokuthwala amazinyo
Dental personnel:	abantu abamazinyo
Dental radiography:	ukufunda ngamakhulu okuthwala isithombe zamazinyo

3

Dental surgery:	indlu kadokotela wamazinyo
Dentin:	uphephe oluthambile lwedinyo oluqhuba ngokuthambile
Definition:	umzomo wamazinyo
Dentistry:	umkhakha wokufunda ngamazinyo
Dentist's responsibility:	igobho ngokumabeni kadokotela wamazinyo
Dentures:	amazinyo ephuzulu
Developer solution strength:	amandla engqubo yokukhiqiza
Developing solution:	ingqubo yokukhiqiza isithombe
Development:	ukukhiqiza
Diagnostic quality:	isithombe esenza kube lula ukubona isith
Digital imaging:	ukuthwalelwa isithombe ngasemhlabathini
Diphtheria:	ugqophongo
Direct action:	isenzo esigondile
Detection of approximal caries:	ukubona ukubona kwamazinyo la ahlangana khona
Diagnosis:	imphumela yokutheleka
Digested:	isizwe ngasemhlabathini
Direct-action:	isenzo esigondile
Disinfection:	ukubulala amagqirha athile
Disposable container:	isigqibo esilahwayo
Distal part:	indawo ekude kakhulu
DNA:	utrofusi
Dose:	isilinganiselo
Drying:	ukumisa isithombe
Duplicating film:	amandla amfuzane welifilimu
Ear rods:	izintshi zokugqala ikhanda
Egg cell:	ibhulathana zegqirha
Exposure:	i-ekspozeshini
Electric current:	ukhumbi kwamandla kagesi
Electrons:	izintshayizi zikagesi
Elongation:	ukubukela kwengqubo yezinyo sikhulu
Emission:	ukuthwala amandla kagesi

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Emulsion:	isamafulekeli
Enamel:	uphephe oluthambile lwedinyo
Excessive salivage:	ukuthwala (okomveni) okungaphezu kokuthengela
Exit port:	igqo kufuna khona imisebe yokwagqha
Exposure charts:	amandla okokuthwala namandla emisebe yokwagqha
External auditory meatus:	impho yemisebe
Extraction:	ukukhiqiza isinyo
Extra-oral film:	ibhulazi yokuthwala isithombe zengqaphanda umlomo
Facial:	ukuthwala kakhulu
Fetus:	umfuzane
Fibrosis:	isifo sokugqoka kwemagqha
Fibrotic:	ukugqoka kwemagqha
Film-finding procedure:	ingqubo yokugqirha kwelifilimu
Film retrievers:	amakhethi esiza okuvoca isithombe
Filtration:	ukwenza ukusabela kwemisebe yokwagqha
Fine vasculature:	imifanekiso yegazi
Fixation:	amakhethi agqoka isithombe abasemweni
Fixer solution:	ingqubo elinye/ ingqubo yokukungqala
Fixer solution strength:	amandla engqubo yokukungqala
Fluorescent screen:	isqembu okuthwala ngokuthwala isithombe
Fluoride taste:	ukumabutha i-fluoride
Forecep:	izindawo zokukhiqiza amazinyo
Forehearing:	ukubukela kwengqubo yezinyo imihlano
Focal plane:	indawo okugqirha kuyo
Fracture:	ukwephuka/ukusabela
Frankfort plane:	indlela ka-frankfort yokuthwala isithombe ze-ekseni
Gelatin:	ukusamafulekela
Gene or chromosome:	ukuzo
Genetic cells:	ibhulathana zokuzo
Genetic stochastic effects:	imithethelaphumela yemisebe yokwagqha okuzweni

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Genetic tissue:	idobu ntumu
Geometric distortion:	yushirika kumiso weinyo ezimbeleni ze-ekweni
Geometric principle:	umgomo omdelwayo una kubeka ama-engile
Goose-neck faucet:	umqungu ondelano ende epibile
Gonads:	izifo zangasasa
Government agency:	izifunyuwa izakulumeni
Grids:	imibini anezakwile
Gross pathology:	izifo ngqo
Growing bone:	ibhonto elinulayo
Growing cartilage:	oqengqa okukhulayo
Haemopoietic tissue:	umkantshe
Haemostasis:	impitsheli engamula ukopha
Health agencies:	izifunyuwa zokuphatha kwemigqo
Hepatitis b:	i-hepatitis b
Hepatitis c:	i-hepatitis c
High frequency:	ayimni esiqhuzulu sokuhamba kwamandla kagesi
High sensitivity:	ukuzwela kakhulu
High speed film:	ifilimu esabisa ngasemini esiqhuzulu
High temperature:	umoya okushisa oluphezulu
Heterogeneous mixture:	ingqubo esabisa
Horizontal angulation:	ukuyindelelwa ngqondo kubal kwefilimu
Human immunodeficiency virus:	igqwana lewubeka ngqondo
Hydroquinone:	i-hydroquinone
Identification dot:	iqutshana elikhomba umntu wefilimu
Illumination:	ukukhanya
Image receptor:	isixazulombe
Imaginary line:	ukubona ngemiso engqondo umugqa okukonisa izinyo wefilimu
Impacted teeth:	amazinyo amila kabi
Implants:	imisele eyiliselwe
Immunization:	ukugcina

Inclination:	ukumba ifilimu
Incisors:	amazinyo angaphambili
Index figure:	inombolo
Indirect action:	isenzo esingagondwenisizenzakelayo
Infection control:	ukungqanda/ukwimbela ukutheleka
Infections:	ukutheleka
Infection risk:	ukubeka ibantu engapheli yokutheleka
Infective hepatitis:	izifo sokuvuruka kwesibini okuthelelayo/ ingaphathayitha
Inflammation:	ukuvuvuka
Infusion:	inkubwenza
Infrared:	ukukhanya okubomvu
Inherent fixation:	ukwathelwa phakathi
Irradiated:	ukubeka imisele yokwelapha
Isight:	ukugqoka
Isolation oil:	ukuyela ethambisa umshini sokutheleka
Intensifying screens:	izigqembile ze-ekweni ezikhapha izibhombi ngokucacile
Intrapertoral:	phakathi kwamazinyo
Intrapertoral contact areas:	izindawo lapho kuhlangana khona amazinyo emaceleni
Intrapertoral surfaces:	izikhala phakathi kwamazinyo
Interadicular bone:	ibhombi eliphakathi kwamazinyo elithambile
Immediate sensitivity:	ukuzwela okuphakathi nendawo
Investinal damage:	ukulimaza kwamathumbu
Isoctones:	amathumbu
Intra-oral film:	ifilimu kokutheleka izibhombi zengaphakathi kintsoni
Inter-oral film:	amafilimu okutheleka izibhombi zengaphakathi kintsoni
Iris:	ihlayiya kagesi
Irradiating radiation:	imisele ekwazi ukukonisa izibhombi
Kidneys:	izibac
Kilovoltage:	i-kilovoltage
Lamina dura:	umebu olumbisa umiso wezinyo
Latent period:	ikhathi lapho lungakenzeki lutho

Lateral oblique projection:	ukubeka kwethoni salweni noma ethanda igalali sile phansi
Latex or vinyl gloves:	amazuluwe akhawe ngocwazi
Lead foil:	iboyile yomtho
Leakage radiation:	izindelele yokwelapha ezuzayo
Lead apron:	ighalali lomtho
Leukemia:	izibongana
Leukemia:	umabandza wegazi
Liquid concentrates:	amakhemikhali adingeka ukubeka amanzi
Liver:	isibini
Long cone technique:	iso kokutheleka umntu acwile
Loss of appetite:	ukungakufundi ukudla/ukhisho omnyama
Loss of vascularity:	ukuba kwemthambo emhokane yegazi
Low sensitivity:	ukuzwela kancane
Lubricated:	gondwe ngamafutha
Lungs:	amazaphu
Lymphoid organs:	isizinda samasitha sile nezibini
Main acute effect:	imifefelungaphambili yemisele yokwelapha emithuleni emva kabi wokuwela
Mandible:	umthethi ongaphansi
Mandibular teeth:	amazinyo angaphansi
Mask:	imaski
Maxilla:	umthethi ongaphambili
Maxillary arch:	umthethi weamazinyo
Maxillary sinus:	izikhala zemoya ezibandakanya kwethula
Mechanical timers:	stop watch
Medical history:	umlando ngokuphatha yalo
Mental retardation:	ukukhuzuka ngokugqondo
Metal part:	imisele esabisa isibini
Metal recycling company:	inkampani esebenzisa imisele kabusha
Metallic filling:	okugqwela izinyo okawenzi
Mixed organism:	igqwama
Mid-sagittal plane:	ukuthatha izibhombi zokhangela

Milliamperage:	i-milliamperage
Molars:	amazibini
Mounting:	ukubeka izibhombi ze-ekweni kuzazi ngomntu
Mucositis:	ukuvuvuka kwezingqonye ezimandl zomntu
Mucosa membrane:	umebu olumandl olumandl
Mumps:	umagqo
Muscle cells:	izotshana zomzimba
Mutation:	ukushirika komiso wezotshana
Neurons:	izotshana zemizwa
Neurological devices:	izidlozi zingqonye eminyoni
Non-emulsion:	okungenamafutha
Non-screen film:	ifilimu angasabisa izigqembile
Nonsterile gloves:	amazuluwe angazibulali magqonantsi
Object film distance:	ibanga kwazinyo wefilimu
Objectives:	izithixo
Occlude:	indlela yokuba kwamazinyo una uase umntu
Occlusal plane:	ukuprinta kwezingqonye olungo yamazinyo
Occlusal film:	izibhombi sokuba kwamazinyo onke
Offspring:	ingane
Optic lens:	umebu oluvilele lisi
Optimum film processing:	indlela okuyi yokutheleka izibhombi ze-ekweni
Oral cavity:	umgqoko
Oral mucositis:	amazigwane soziminyoni
Oral mucosa:	izingqonye zemimiso omanzi
Oral tissue:	isidlozi soziminyoni
Orthodontic assessment:	ukunika ukuthi amazinyo angagondwa kanye
Orthodontics:	izidlozi zandela yokuprinta amazinyo
Osteiodiagnostic:	ukukhuzuka kwamafutha
Outer package:	okokopha
Overhead white light:	ukuthanya okumthapo okuphambili ngaphesheya
Overlap:	ukugqokana kwamazinyo

Overlapping of cuspae:	ukubuka kwamazinye sangathi agbewene
Oxidation:	ukutha unoye omazokokuutha i-oksiji
Outlining:	ukungena komoya okhethekile
Palatal process:	ilethu elingapha
Palatal vault:	ingxungxungu
Panoramic radiography:	isithombe sokuthetha isithombe somnathi ophela
Paper towels:	isikwenkulu okungamagapha/amagapha okwesith
Paper wrapping:	ukugqo ngagapha
Paralleling technique:	isithombe sokupendama
Pathogens:	imndeni wemagqwane
Pathological conditions:	isimo esithandane kwabo
Patient preparation:	ukufungwa kwezigidi
Patient protection:	ukukhulula kwezigidi
Pedodontic:	ukuthathela ngagapha
Peri-apical film:	ifilimu ephakathi eduze komakha
Periodontal bone:	ifilimu elibambisa izinye
Periodontal membrane:	ilethu okufakama phambi nendyiso
Periodontal treatment:	ukwelapha ifilimu elibambisa amazinye
Posterior:	ngemva
Posterior tongue:	ingemva lelini
Polyester base:	isidokolo sokokhi
Position indication device pit:	inkombamano ye-ekisireyi
Posters-anterior:	kusuka emuva kuya ngaphambili
Potassium alum (hardener):	i-silimu ephothogeyithi
Potassium bromide:	i-potashini bromide
Potential for biological damage:	ngokwenzeka ukuthi ngaba nokungazi okuninzi
Precision paralleling device:	thuluzi elipendama ifilimu namazinye
Pre-determined exposure:	ukukhala kwamandla azidingeka ukuthathela isithombe
Pregnancy:	ukukhululeka
Prevalence:	umthetho
Preservative:	indobuzayo

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Primary radiation:	imisebe yokwelapha egondawo endaweni ethile
Processing chart:	ishadi lampho yokukhulisa izithombe
Processing racks:	ungqubo wokufungwa izithombe
Processors:	imithetho ekhulisa amandla okwelapha
Professional responsibility:	ukuphelele kwabo umsebenzi/umsebenzi wokuphelele
Proper exposure factors:	izidinga ukuthetha ngaphambili kokuthethetha kwe-ekisireyi
Proper prescribing:	umthetho nokuyala ngokuthethetha okuyithu mthetho
Proper technique:	isithombe
Protective attire:	impahla yokukhululeka
Protective barriers:	ukukhululeka ukungena kwamagqwane ngokwenzeka
Protective coating:	umkoti lokukhululeka
Protective eyewear:	ibhokisi yokukhululeka amehle
Pulpoma:	umthetho okhululeka kokhululeka kokhululeka kokhululeka
Pseudoembryonic covering:	umthetho okhululeka kokhululeka kokhululeka kokhululeka
Psychological reasons:	izidinga okhululeka kokhululeka kokhululeka kokhululeka
Pulp chamber:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Quality control:	ukuphelele kokhululeka kokhululeka kokhululeka kokhululeka
Quality assurance policy:	ingqongamiso yokuphelele kokhululeka kokhululeka kokhululeka kokhululeka
Radiation:	imisebe yokwelapha
Radiation caries:	ukubola kokhululeka kokhululeka kokhululeka kokhululeka
Radiograph:	ukuthetha kokhululeka kokhululeka kokhululeka kokhululeka
Radiocement:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Radiology:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Radiopaque plastic backing:	ifilimu kokhululeka kokhululeka kokhululeka kokhululeka
Radiosensitive tissues:	izidinga kokhululeka kokhululeka kokhululeka kokhululeka
Radiation protection:	ukukhululeka kokhululeka kokhululeka kokhululeka
Radiation safety procedures:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Recycling:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Reducing agent:	inkopho
Replenishing:	ukwenza kokhululeka kokhululeka kokhululeka kokhululeka

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Respiratory secretions:	amandla namazinye
Restainer:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Rise xcp instrument:	amandla kokhululeka kokhululeka kokhululeka kokhululeka
Rubella (german measles):	i-rubella/ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Rule of Isometry:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Salivary flow:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Salivary gland:	indaba yamandla
Salivary stones:	amandla kokhululeka kokhululeka kokhululeka kokhululeka
Scatter radiation:	imisebe yokwelapha okhululeka kokhululeka kokhululeka kokhululeka
Screen film:	ifilimu esebenzisa uphawo
Secondary radiation:	imisebe yokwelapha yemvelo
Semirigid instrument:	thuluzi elingama eminye eminye elithethetha kokhululeka kokhululeka
Sensation:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Sensors:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Sequence of events:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Severts/millieverts:	ama-severts/ama-millieverts
Silver halide crystals:	izithombe kokhululeka kokhululeka kokhululeka kokhululeka
SKIN:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Skin reddening:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Slight bluish tint:	ifilimu okhululeka kokhululeka kokhululeka kokhululeka
Sodium carbonate:	i-sodium carbonate
Sodium sulphate:	i-sodium sulphate
Sodium thiosulphate (clearing solution):	ingqubo ye-sodium thiosulphate
Somatic deterministic effects:	imithetho kokhululeka kokhululeka kokhululeka kokhululeka
Somatic hazard:	okuninzi kokhululeka kokhululeka kokhululeka kokhululeka
Somatic stochastic effects:	imithetho kokhululeka kokhululeka kokhululeka kokhululeka
Source-film distance:	ibanga phakathi kokhululeka kokhululeka kokhululeka kokhululeka
Sperm cell:	izithombe kokhululeka kokhululeka kokhululeka kokhululeka
Spill:	-fukanyayo
Stabilising apparatus:	isimo kokhululeka kokhululeka kokhululeka kokhululeka
Sterilization:	ukukhululeka kokhululeka kokhululeka kokhululeka

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Striking rods:	izinye zokugqibaza
Strip bath:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Stray radiation:	imisebe yokwelapha okhululeka kokhululeka kokhululeka kokhululeka
Submandibular or sublingual gland:	indaba kokhululeka kokhululeka kokhululeka kokhululeka
Subsidiary:	indaba kokhululeka kokhululeka kokhululeka kokhululeka
Supernumerary teeth:	amandla kokhululeka kokhululeka kokhululeka kokhululeka
Supplies:	phakathi kokhululeka kokhululeka kokhululeka kokhululeka
Susceptible host:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Syphilis:	ugqibaza kokhululeka kokhululeka kokhululeka kokhululeka
Target:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Taste buds:	izinye zokuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Tender oral cavity:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Teles:	amandla kokhululeka kokhululeka kokhululeka kokhululeka
The control panel:	isithombe kokhululeka kokhululeka kokhululeka kokhululeka
The extension arm:	ingqubo kokhululeka kokhululeka kokhululeka kokhululeka
Thermometer:	thuluzi kokhululeka kokhululeka kokhululeka kokhululeka
The tubehead:	isithombe kokhululeka kokhululeka kokhululeka kokhululeka
Thyroid collar:	isithombe kokhululeka kokhululeka kokhululeka kokhululeka
Thyroid gland:	indaba kokhululeka kokhululeka kokhululeka kokhululeka
Tipping:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Tissue:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Tissue sensitivity:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Tomography:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
Tooth eruption:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Total filtration:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Traces of ear:	izithombe kokhululeka kokhululeka kokhululeka kokhululeka
Transmittance:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Transparent plastic base:	umthetho kokhululeka kokhululeka kokhululeka kokhululeka
True occlusal:	ukuthethetha kokhululeka kokhululeka kokhululeka kokhululeka
Tuberculosis:	isithombe kokhululeka kokhululeka kokhululeka kokhululeka
Tumours:	izinye kokhululeka kokhululeka kokhululeka kokhululeka

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Ultraviolet	ukudleka nokhupeni
Ultraviolet light	ukudleka okubomkhesuane
Ultraviolet	i-ultraviolet
Unrugged teeth	amandziyo angakagqumi
Upper standard occlusal	ukuntwazi kwakhona adaleni ngqal' aladi
Upper oblique occlusal	ukuntwazi kwakhona adaleni ngqal' omile
Vertex occlusal	ukuntwazi kwakhona pithakayisi
Vertical angulation	ukumakwefilimu kpono phozulu
View box	ibhokisi lokutshika izithombe
Viscous	ukujijya/ukushaba
Voltage current	umthamo wamandla kagesi
Vomiting	ukubuyisa/ukutshata
Wasting	ukukhishwa izithombe
Water repellent	ukuntwazi ukutshika kwamanzi
Wax modeling	ukufunda ze-elastic ngokumakela
White blood cells	inkuthwana ekhokhokha ngqaleni
Xerostomia	ukuma komomo
X-rays	imisebe yokuthedwa izithombe zangaphakathi (x-ray)
X-ray generating apparatus	iziphelelwanxe
Zygomatic buttress	iziphondo

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Dental Assisting Terms - Part 3
Amatemu akwa-Dental Assisting - Ingxenye 3



1

Physiologic condition:	a condition affecting the normal functioning of the body, where nothing has gone wrong (e.g. not a sore, infection, disease)
Aetiology and diagnosis of oral conditions:	aetiology = how does the disease occur/the cause E.g. a virus diagnosis = to discover the cause problem through examination/blood tests etc. (<i>gibangala mabururwazi hwafo zazantonyeni</i>)
Modification or adaptations:	to change, adjust (<i>ukushintsha noma ukusetyenziswa</i>)
Permit appraisal:	allow an evaluation/inspection of something (E.g. allow a doctor to examine a wound to determine how serious it is, <i>ukika imizwa</i>)
Prognosis:	the expected outcome of a disease (E.g. patients with advanced cancer have a poor prognosis (limited chance of recovery) (<i>uraphumela okhukile</i>)
Side-effects:	bad effects (E.g. if you take the wrong medication the side effects can include vomiting and kidney failure (<i>ingaphumela ingaphumela</i>)
Harmful sequel:	the bad effects that follow (E.g. if you cut yourself with a rusty nail you could get infected (harmful sequel is the infection - not the injury) (<i>ingaphumela ingaphumela ngama yikushwela kakhulu akhulu akhulu</i>)
Inadvertent lack of neutrality:	unintended taking of sides (E.g. when treating a patient you may be unintentional parties in your treatment, but not intentionally (<i>ukuchuma kungaphumela</i>)
Self-administered test:	a medical test (E.g. pregnancy test) that you do on your own (<i>ukufikela</i>)
Rheumatic fever:	a type of disease affecting the heart (<i>ukhushwela emikhini</i>)
Support relationship:	the doctor has an excellent support (bedside manner, relationship) with his patients (<i>ukubonakala kubandakanya nasekaya</i>)
Leukemia:	a disease affecting blood cells (<i>umkhawo wasekaya</i>)
Congestive heart failure:	a disease where the heart does not beat properly over a long period of time and gets weaker every day (<i>ukhushwela kakhulu kakhulu</i>)
Antibiotic coverage:	medicines that are given to reduce/prevent infections from occurring (<i>ingaphumela</i>)

NOTES

NOTES

Contraindicate premeditation:	pre-medication some medications are given prior to a procedure. In the case they are contraindicated (negative signs (E.g. patient allergic to the medication) and therefore the medication is not given (<i>ukubhekisa noma ukubhekisa noma ukubhekisa</i>)
Tranquillizers:	drugs that have a calming effect (<i>ukubhekisa/ukubhekisa</i>)
Sedatives:	same as tranquillizers, but these make you sleep as well (<i>ukubhekisa</i>)
Anti coagulant:	medication that makes the blood less sticky and unable to clot, person bleeds easily, bruise blood (<i>ukubhekisa ukubhekisa</i>)
Local anaesthetics:	medicine given into an area that only makes that area numb (E.g. just one tooth, not the whole mouth) (<i>ukubhekisa/ukubhekisa</i>)
Hematology disorder:	any disease affecting the blood (<i>ukubhekisa</i>)
Phenytoin-induced:	phenytoin is a drug (aka OLANTIN) that leads (causes-induced) to the gums overgrowing (<i>ukubhekisa yphenytoin</i>)
Viral hepatitis:	inflammation of the liver caused by a virus (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Herpes:	a sexually transmitted disease (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Syphilis:	a sexually transmitted disease (<i>ukubhekisa</i>)
Puberty:	a stage of development when boy becomes man/girl a woman around age 10-14 (<i>ukubhekisa</i>)
Menopause:	around age 40-50, when a lady stops having periods and undergoes some body changes (E.g. hot flashes, mood swings) (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Prophylactic medication:	medication given to prevent a sickness/infection/pregnancy etc. (<i>ukubhekisa/ukubhekisa</i>)
Endocarditis:	swelling of the top layer of the heart (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Congenital cardiac malformation:	a defect in the heart that has been there since birth (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Furrie diseases:	diseases involving infection, where they have very high temperatures with continuous febrile spikes (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Vascular damage:	damage of the heart vessels (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)
Prosthetic cardiac valves:	man-made heart valves (<i>ukubhekisa/ukubhekisa/ukubhekisa</i>)

Mitral valve prolapse:	collapse of the mitral (bicuspid) heart valve obala iwemiridi valvuloprolaps
Systemic-pulmonary shunts:	a pipeline that runs from the heart to the lungs to revive fresh fruit sistimu alikpaga okuwakamshet atuchekani
Prosthetic joint:	a false joint E.g. knee/hip fungs ikuchekani
Corticosteroids:	a type of drug okoto iwemikamshet - corticosteroid
Immunosuppressive therapy:	medication to kill the immune system so that the body does not reject donated/transplanted organs ndiye atubikaku awasatika onkama
agranulocytosis:	a condition affecting blood cells where there is an absence of granulocytes (parts of a cell) agranula iwemikamshet ngokumshet iwegransulocytes
Sickle cell anemia:	a disease of blood cells where the cells look like quarter moons (sickles) siku sakuohshani zime njangeshela ngana yikushetika kwa-okajini
Renal transplant:	kidney transplant okushetika irisi
Hemodialysis:	a process of cleaning the blood by attaching the patient to a machine and allowing the blood to flow through the filters of the machine, removing poisons okushetika iwagag - hemodialysis
Glomerulonephritis:	a disease affecting the kidneys okuwakamshet kagranulohama zama
Contaminated sharp:	a needle that has blood on it okushet ikaweshika atigokumshetika
Respiration:	the process of breathing in and out okushetika
diastolic pressure:	the blood pressure when a person is at rest amshetika wogag una inshetika ngamshet
Systolic pressure:	the blood pressure when a person is active amshetika wogag una inshetika shetika
Radial artery:	a blood vessel on the arm amshetika wogag ngamshet
Carotid artery:	a blood vessel on the neck amshetika wogag amshetika

4

Heart rate:	how many times a minute the heart beats izaga ikushetika iwemiridiye
Heart rhythm:	how regularly the heart beats E.g. — or - - - - - amshetika iwemiridiye iwemiridiye
Elasticity of vessels:	the ability of blood vessels to expand and contract okuwakamshet iwemiridiye yagag
Circulatory system:	the heart and blood vessels ngogutu yikushetika iwagag
Rest depressants:	medication that allows you to relax okoto
Hemorrhage:	bleeding okoto
Pulmonary insufficiency:	the lungs do not work properly, and are unable to supply the body with sufficient oxygen okumshetika kwa-okajini amshetika
Hyperthyroidism:	where the thyroid gland is overactive okumshetika ngokumshetika kwandika - thyroid
Myocardial infarction:	heart attack okuma kwemiridiye
Tachycardia:	fast heart beat inshetika izaga ngamshetika
Bradycardia/Brady Cardiac:	slow heart beat inshetika izaga kama
Ischemic heart disease:	heart disease caused by insufficient oxygen supply into okumshetika kwa-okajini amshetika
Lumen of the coronary arteries:	part (wall) of the blood vessel in the heart (coronary) okumshetika okumshetika amshetika iwemiridiye
Atherosclerosis:	a condition where the blood vessels narrow due to the accumulation of fat on the walls of the blood vessels okumshetika okumshetika amshetika iwemiridiye
Thrombus:	a blockage of the walls of the arteries okumshetika kumshetika iwemiridiye ngokumshetika
Blood lipids:	a part of the make up of the blood amshetika ngamshetika
Cholesterol:	fat okumshetika
Saturated fat:	saturated fat amshetika amshetika
Calorie:	a unit of measure of the amount of energy that food contains okumshetika amshetika okumshetika
Angina pectoris:	chest pain, not heart attack okumshetika kwemshetika amshetika

5

Myocardial oxygen deficiency:	insufficient oxygen to the heart muscles okumshetika kwa-okajini amshetika iwemiridiye
Nitroglycerin:	the name of a drug used in heart attacks ngamshetika
Streptococcus infection:	a type of virus that causes infections okumshetika okumshetika yikushetika okumshetika
Acute rheumatic carditis:	acute/rheumatic painful valve okumshetika kwemshetika okumshetika okumshetika kwa-okajini
Cardiac murmurs:	abnormal heart sounds okumshetika (okumshetika iwemiridiye)
Anemia:	a condition where there is too little oxygen in the blood, the person becomes pale/white okumshetika kwemshetika iwemiridiye ngamshetika
Splenomegaly:	enlargement of the liver okumshetika kwemshetika
Hemiplegia:	half the body is paralyzed okumshetika okumshetika okumshetika okumshetika
Pericardial hemorrhages:	small spots of bleeding amshetika okumshetika
Endocarditis:	swelling on the outer layer of the heart okumshetika kwemshetika okumshetika iwemiridiye
Coronary occlusion:	blockage of the blood vessels of the heart okumshetika kwemshetika iwemiridiye ngamshetika
Ventricular fibrillation:	the lower (ventricle) part of the heart does not beat properly, it merely shivers instead of beating okumshetika kwemshetika iwemiridiye iwemiridiye
Cardiopulmonary resuscitation:	see CPR okumshetika okumshetika okumshetika okumshetika
Acute phase:	swollen part/flare okumshetika okumshetika
Digitalis:	a type of drug, affects the heart rate amshetika iwemiridiye izaga ikushetika inshetika
Adrenergic beta-receptor blocking agents:	a type of drug, affects the kidneys mshetika kushetika iwemiridiye
Adam's attack:	a type of disease – named after adam: siku kwemshetika kwa-Adam
Cerebral blood flow:	blood that flows to the brain okumshetika iwemiridiye okumshetika
Atheroma:	fat on the walls of blood vessels okumshetika amshetika iwemiridiye

6

Venue return:	decompressed (blue) blood that flows from the legs/arm/head to the heart siku okumshetika okumshetika okumshetika
Cerebro-vascular accident:	a stroke, one part of the body becomes paralyzed, speech affected siku okumshetika okumshetika
Paraplegia:	the entire body becomes paralyzed okumshetika okumshetika okumshetika
Hemi-paralysis:	half the body becomes paralyzed okumshetika okumshetika
Thrombosis:	a blockage of the blood vessels with swelling of the blood vessels okumshetika kumshetika wogag
Cerebral infarction:	a blockage (and death) of a part of the brain, results in a stroke siku kwemshetika yikushetika
Intracerebral embolism:	when a piece of fat breaks off from the walls of the blood vessel and travels to the brain (in between the parts of the brain) okumshetika kumshetika wogag ngokumshetika
Hypercholesterolemia:	high levels of cholesterol in the blood izaga atubikaku okumshetika okumshetika
Estrogen:	a hormone okumshetika okumshetika
Paralysis Hemi-plegia:	half the body becomes paralyzed see hemiplegia okumshetika okumshetika okumshetika
Sensory loss:	loss of sensation (touch/hearing etc) okumshetika okumshetika
Visual impairment:	eye/eye affected/blindness vision okumshetika okumshetika
Depression:	not mentally affected okumshetika okumshetika
Convulsions:	titting, shaking of the body okumshetika
Viral infection:	an infection caused by a virus okumshetika ngokumshetika iwemiridiye
Infantile convulsion:	titting by infant seizure affecting babies okumshetika iwemiridiye
Tepid water:	warm (not hot) water amshetika okumshetika
Grand mal seizure:	the whole body shakes okumshetika okumshetika okumshetika

7

Sagittae position:	lay on the back ukwile ngembele
Thumb nail seizure:	a small part E.g. the hand ukusuka ukuphazanyisa kwempenya yembele
Intermittent blinking:	blinking of the eyes once in a while now and then ukuswayisa angayazi
Blank stare:	looking into space, I was away of one's surroundings ukondweshuhuphelele ube angaboni
Metabolic disorder:	a condition affecting the body's ability to use hormones/food ukuba akhangeyazi kakhulu
Syndrome :	a collection of diseases is a syndrome E.g. 10/10 diseases (throat, its etc) = AIDS (syndrome) inkhangelele yazo
Pancreatic disease:	disease of the pancreas ukuba kakhulu
Keratin:	hardening of the layers of the skin ukuzisa kwinkqubo yazo yakhulu
Insulin:	a hormone released by the pancreas inkqubo
Atropin onset:	system start E.g. suddenly get a fever ukusuka ukugqoka
Polyuria:	too much urine umkhawo omningi
Polydipsia:	too thirsty ukuba kakhulu
Polyphagia:	too much swallowing of food's value ukugqoka amafu amaningi
Septic socket:	a socket (hole left after tooth extraction) that has become infected (septic) ukuba kakhulu
Oral cavity:	the mouth umgundungaphakathi kumbele
Periodontium:	the gums and bone that hold teeth in place umkhawo nokuzisa ukhathisa amafu
Neuropathy:	a medical condition affecting the nerves ukuba kakhulu
Nephropathy:	A medical condition affecting the kidneys ukuba kakhulu
Retinopathy:	a medical condition affecting the eye ukuba kakhulu

1

Atherosclerosis/ Atherocholesterol:	fat on the walls of blood vessels ukusuka kumbele amafu amaningi
Xerostomia:	dry mouth/insufficient saliva ukuba kakhulu ukusuka kumbele
Hyperglycemia:	too much sugar/high blood sugar levels ukusuka kumbele ukusuka kumbele
Hypoglycemia:	too little sugar/low sugar levels ukusuka kumbele ukusuka kumbele
Acetone breath:	breath that smells of acetone (acid that poisons pancreas) ukusuka kumbele
Vital signs:	signs of life E.g. blood pressure, heart rate umkhawo, umkhawo ukusuka kumbele
Anxiety:	worried/worried/worried ukusuka kumbele
Hyperventilation:	breathing too fast ukusuka kumbele ukusuka kumbele
Alveolar carbon dioxide:	air in the lungs umkhawo ukusuka kumbele
Alkalotic state:	the body has too little acid ukusuka kumbele ukusuka kumbele
Adrenaline:	a hormone ukusuka kumbele
Precipitation (sweats):	the cause of something E.g. hair precipitation (sweats and comes sweats) chest pain ukusuka kumbele
Hyperemotional:	a person that gets too excited for every small little thing umkhawo ukusuka kumbele
Tingling sensation:	a tingly feeling E.g. when someone turns a heater under your foot it tingles ukusuka kumbele
Hemophilia:	a blood disorder ukusuka kumbele
Congenital disorder:	a disorder that you were born with ukusuka kumbele
Willebrand:	a type of disease ukusuka kumbele
Christmas disease:	a type of disease ukusuka kumbele

2

Autoosomal codominant trait:	a type of sickness that comes from within ukusuka kumbele ukusuka kumbele
Gingival:	gum umkhawo
Periodontal infection:	infection of the gums and mouth ukusuka kumbele ukusuka kumbele
Flossing:	cleaning in between the teeth, using floss ukusuka kumbele
Plaque accumulation:	a collection of food that is stuck on the teeth (plaque) ukusuka kumbele ukusuka kumbele
Inflammation:	swelling ukusuka kumbele
Perinatal hemophilic history:	a history of blood disorders umkhawo ukusuka kumbele
Hematologist contribution:	the specialization of the blood specialist (hematologist) when treating a patient ukusuka kumbele ukusuka kumbele
Subgingival instrumentation:	the use of dental instruments below the gums ukusuka kumbele ukusuka kumbele
Surgical procedures:	to operate E.g. to extract a tooth, to remove the appendix ukusuka kumbele
Cerebral anoxia:	a lack of oxygen to the brain ukusuka kumbele ukusuka kumbele
Vasovagal attacks:	a condition where the blood pressure falls and you collapse ukusuka kumbele ukusuka kumbele
Vasagal tone:	the strength of the blood vessels umkhawo ukusuka kumbele
Cardiac output:	the amount of blood pumped out by the heart umkhawo ukusuka kumbele
Cardiac arrest:	the sudden stopping of the heart, the death of the heart ukusuka kumbele
Carotid arteries:	the veins of the neck umkhawo ukusuka kumbele
Anterior chest:	the front part of the chest umkhawo ukusuka kumbele

3

Myocardium:	the muscles of the heart umkhawo ukusuka kumbele
Cardiac massage:	to rub the heart ukusuka kumbele ukusuka kumbele
Dilated:	to open up/ wide open ukusuka kumbele
Sino-atrial:	a part of the heart (conducts electricity from the brain and sends it into the heart) umkhawo ukusuka kumbele
Ventricles:	the lower part of the heart umkhawo ukusuka kumbele
Arrhythmia:	an incorrect/irregular heart rate umkhawo ukusuka kumbele
Electronic stimulator:	a device (generator) that supplies electricity to the heart to force the heart to beat umkhawo ukusuka kumbele
Electrodes:	wires attached to the heart and the pacemaker umkhawo ukusuka kumbele
Endocardium:	the outer layer of the heart umkhawo ukusuka kumbele
Plastic-encased:	covered in plastic umkhawo ukusuka kumbele
Hemotically soaked:	totally soaked/drenched nothing can get in umkhawo ukusuka kumbele
Lithium anode battery:	a type of battery E.g. your cellphone battery is lithium anode umkhawo ukusuka kumbele
Electromagnetic interference:	electrical interference E.g. the way your cellphone affects the tv when the phone is near the tv and it rings umkhawo ukusuka kumbele
Ultrasonic scaling units:	a piece of dental equipment umkhawo ukusuka kumbele
Electrodesiccating equipment:	equipment used to block off electrical interference (see electromagnetic interference) umkhawo ukusuka kumbele
Electrosurgery machines:	an electric machine used to carry out surgery umkhawo ukusuka kumbele
Syncope:	collapse/faint umkhawo ukusuka kumbele
Hiccoughing:	hiccups umkhawo ukusuka kumbele
Muscle twitching:	the muscles twitch/tremble umkhawo ukusuka kumbele

4

Defibrillator:

a machine used to shock the heart when the heart stops working
umshilo wokuvusa isibizo

Lead apron:

an apron made of the metal lead
aproni yamthixo

Hypersensitivity:

too much of the hormone adrenaline in the body
ubungo ngokwengele be-adrenaline emzimbeni

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