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Teacher receptivity to system wide change: The introduction of student outcome statements in secondary schools in Western Australia

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Teacher receptivity to system-wide change:

The introduction of Student Outcome Statements in secondary schools in Western Australia

by

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ABSTRACT

The study has three aims. One is to investigate teachers' receptivity to the use of Student Outcome Statements in Western Australian, government, secondary schools. The dependent variable is receptivity towards the use of Student Outcome Statements and is measured in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. Two is to investigate the relationships between receptivity, as the dependent variable, and ten independent variables: non-monetary cost benefits, alleviation of fears and concerns, significant other support, feelings compared to the previous system, shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities. Three is to investigate the relationships between receptivity and the independent variables, in the context of the situation variables related to the school, department and teacher. The situation variables are: school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose to which Student Outcome Statements are put.

The study will add to knowledge in three ways. First, it will test a model of major educational change at the beginning of the implementation stage, in a centralised educational system. The model is based on existing research and combines variables from various studies including some from Western Australia and some from overseas. Second, it will provide new data on teacher receptivity to a major change in Western Australia: the use of Student Outcome Statements. Third, the study will provide advice to educational decision-makers and administrators on how best to implement system-level changes in a centralised education system.

The empirical data for the study were collected using a teacher questionnaire including existing and newly developed scales. There were 126 valid questionnaires returned to the researcher from 30 different senior high schools

across Western Australia. An analysis of the scales measuring each variable was undertaken using a Rasch measurement model. For each variable, the difficulties of the valid items were calibrated on the same interval level scale as the variable measures. While acceptable scales were developed and used, they could all be improved and should be further developed for any future research.

A preliminary qualitative analysis of the data was undertaken to investigate teacher receptivity to the use of Student Outcome Statements. Zero-order Pearson Product-Moment correlations were calculated between the dependent variables and the group one independent variables, between the dependent variables and the group two independent variables and the two groups of independent variables, and between the dependent variables and the situation variables and were investigated using multiple regression analysis.

The preliminary result indicated that 91% of teachers supported the use of Student Outcome Statements. The most significant reasons for using Student Outcome Statements were for the purpose of monitoring student achievement (96%), planning teaching and learning programmes (91%) and collecting student assessment information (84%).

The group one independent variables non-monetary cost benefits, significant other support and feelings compared to the previous system had moderate to strong positive correlations with the dependent variables (Overall Feelings, Attitudes, Behaviour Intentions and Behaviour). The group two independent variables involvement in decision-making and collaboration had a moderate positive relationship with Behaviour and team teaching had a small negative relationship with Behaviour. Teacher learning opportunities had a small positive relationship with Overall Feeling, Attitudes and Behaviour Intentions. Involvement in decision-making and collaboration had a small positive relationship with Behaviour Intentions. Cohesiveness had a small positive relationship with Attitudes and team teaching had a small negative relationship with Attitudes. Involvement in

decision-making had a small positive relationship with Overall Feelings. There was no relationship between the dependent variables and the situation variables.

All the group one and group two independent variables together explained 59% of the variance in Overall Feelings, 48% of the variance in Attitudes, 50% of the variance in Behaviour Intentions and 40% of the variance in Behaviour. The situation variables did not account for any significant variance in the dependent variables.

The implication of these results for the theory of system-wide educational change in a centralised system such as Western Australia and for education administrators are discussed.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

1. incorporate, without acknowledgment, any material previously submitted for a degree or diploma in any institution of higher education;

2. contain any material previously published or written by another person except where due reference is made in the text; or

3. contain any defamatory material.

NAME: [redacted]

SIGNATURE:

DATE: 25 August 1999

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Rose Moroz

August, 1999

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CHAPTER 1
INTRODUCTION

Background

Developments of the National Statements and Profiles

Lokan (1997) details the history of the development of a national curriculum for school education in Australia. Over a period of some 30 years, a national curriculum for schools was promoted and a number of national curriculum projects were initiated where materials were developed to support states and territories to adopt this approach. The take-up by states and territories was varied and the approach did not have much impact across the nation until the 1980s. Lokan (1997, p.3) states that "a paradigm shift from focusing on individual students as learners to an economics-driven concern with achieving pre-specified outcomes occurred in the early 1980s. The view was that outcomes should be specified so that performance could be measured. The pendulum swung back to support from the general public for greater curriculum control and greater accountability for education".

In 1988 the Commonwealth, states and territories agreed to work on national collaborative curriculum projects, a direction which was strongly advocated by Dawkins, the Federal Education Minister. "For the next five years, until mid 1993, there followed an extraordinary amount of collaborative work to reach agreed positions on what constituted the essential 'learning areas' for schools (eight were agreed on: The Arts, English, Health & Physical Education, Languages other than English, Mathematics, Science, Studies of Society and Environment, Technology); on producing agreed 'statements' of the content to be covered at various stages; and on specifying 'profiles' of outcomes against which to assess achievement at various levels" (Lokan, 1997, p.4).

By mid 1993, the statements and profiles were completed in draft form ready for endorsement by the Australian Education Council. However, at a meeting in Perth

on 2 July 1993, the federal and state ministers of education referred them back to the states and territories. "Thus the vision of a national curriculum for Australian schools was officially terminated, in one afternoon, in a decision that was unexpected in most quarters" (Lokan, 1997, p.6). Each state and territory decided on an individual course of action with varied timelines. In Western Australia, a decision was made to develop Student Outcome Statements, based on the National Statements and Profiles (Lokan, 1997).

History of Student Outcome Statements in Western Australia

The future of the National Statements and Profiles in Western Australia was strongly influenced by the policy direction, which was launched after the release by the Education Department of a document called *Better Schools in Western Australia* in 1987. Randall (1997) traces the progress of this development in the following decade. The policies and guidelines produced during this period focused on the devolution process and how schools might best be empowered and supported to manage at the local level. During the debate it became apparent that "a shift from external judgements by system superintendents about the quality of school and student performance to internal judgements by the school raised questions about the basis for making judgements. It was agreed that some kind of framework, specifying expected or desired student outcomes, was necessary" (Randall, 1997, p.196). A decision was taken by the Education Department in 1990 to develop eight sets of student outcomes that would be mandated by the system and delivered at the school level (Randall, 1997). These student outcomes would apply to the compulsory years of schooling in Western Australian, government schools.

In the next few years, this commitment was reinforced by the completion of a set of policies and guidelines, on school planning, decision-making, financial management and accountability. The Education Department of Western Australia produced four critical documents: *School Development Planning* (1989), *School Decision Making* (1990), *School Financial Planning and Management* (1991) and *School Accountability* (1991). In 1997, the Education Department of Western

Australia released, in draft form for consultation, its Curriculum Policy, which had three components: *Curriculum Provision, Student Assessment* and *Reporting to Parents* (1997). These policies were to confirm the philosophical approach begun with the development of the *School Development Planning* (1989) document and linked the Student Outcome Statements with the implementation of the *Curriculum Framework* released by the Curriculum Council of Western Australia in 1998.

As stated in Lokan (1997, p.196), it was due to the success of two Western Australian projects, *First Steps* and *Monitoring Standards in Education*, that work commenced in English and Mathematics and built on the progress already made in those projects. (*First Steps* is a comprehensive literacy and learning program for primary students and *Monitoring Standards in Education* is a standards monitoring program which assesses student performance across the system.) At the same time, links were made at a national level in Mathematics and draft documents of the English and Mathematics Student Outcome Statements were made available to all government schools in 1992. The Education Department of Western Australia's *Student Outcome Statements Working Edition* (1994, p.2) describes the national linking process. "In a spirit of co-operation the Ministers for Education across Australia agreed to jointly develop learning area profiles in eight curriculum areas. The Education Department of Western Australia determined that it would contribute to the development of the Learning Area Profiles as an efficient method of providing student outcome statements for use in Western Australia. The product of the collaborative work by the Australian States and Territories culminated in a set of materials being presented to the Australian Education Council in July 1993. At this meeting, it was agreed that the materials should be returned to the States and Territories for review and for decisions about how they were to be used."

In Western Australia, extensive consultation took place across the sectors, which focused on reviewing the materials, making recommendations for modification and providing advice to the Minister of Education. As a result, *Working Edition*

(1994) documents were developed which incorporated recommended changes and were used during the subsequent trial in eighty-eight schools during 1994 and 1995.

Trialing the Student Outcome Statements

The objective of the trial was to ensure that teachers and schools were afforded the opportunity to provide feedback so that the documents could be refined and adapted to the needs of students in Western Australia. "A two year trial of *the Students Outcome Statements: Working Edition 1994* was the culmination of both State and national efforts to develop a standards framework that would improve student learning and the accountability of teachers and schools" (Education Department. 1996. p.1). The trial process involved "work with eighty-eight schools representing all learning areas. all phases of schooling and all types of schools across a wide range of geographical locations" (Education Department. 1996, p.5).

The Curriculum Council of Western Australia

The Curriculum Council of Western Australia is a cross-sectorial body and statutory curriculum authority responsible for accreditation and curriculum development. It has developed a *Curriculum Framework* which sets out the major outcomes and the key content and skills to be learned in the eight learning areas in each phase of schooling. All children in Western Australia will be required to work within the *Curriculum Framework.* This includes the government, independent and catholic sectors and home schoolers. The *Curriculum Framework* consists of an overarching curriculum statement and eight learning area statements. It defines the curriculum, sets out the major outcomes and outlines key content and skills to be developed during each phase of schooling.

Student Outcome Statements

"Student Outcome Statements describe in progressive order most of the outcomes students are expected to achieve in each of the learning areas throughout the compulsory years of schooling. Wherever possible the outcomes are sequenced to take account of the developmental stages of learning. The Student Outcome

Statements reflect the knowledge, understandings, processes and skills, which are considered to be essential for all students. There are eight broad areas of learning: The Arts, English, Health and Physical Education, Languages other than English, Mathematics, Science, Society and Environment, Technology and Enterprise" (Education Department, 1996, p.2). The Western Australian Student Outcome Statements evolved from the work by the States and Territories on the National Statements and Profiles, which was completed in June 1993.

The Student Outcome Statements are closely linked with the *Curriculum Framework* and the processes established ensured that both sets of documents were developed simultaneously. The Education Department of Western Australia has designed the Student Outcome Statements as its main strategy for the implementation of the *Curriculum Framework*. They are intended to be a highly supportive tool for teachers to use to monitor student learning and to plan for improvement. Using this knowledge about their students' learning, teachers are able to plan their teaching at the level appropriate to each student's development. All schools are expected to direct their educational programs to assist students to achieve the learning outcomes as they progress through school.

In 1998, all government schools established plans for the implementation of the *Curriculum Framework* and the Education Department's *Outcomes and Standards Framework*. The *Outcomes and Standards Framework* consists of the Student Outcome Statements for the compulsory years of schooling (K-10) and the standards which will be established by the year 2004 using the Student Outcome Statements. The Student Outcome Statements will be used in government schools as an accountability tool and as a means of improvement. The focus will be on teaching and learning, monitoring and assessment, reporting to parents, curriculum development and implementation and school development planning and accountability.

The *Curriculum Framework* and its learning area statements have now been accepted across the sectors as the definition of the curriculum. The trial and the

work of the Curriculum Council's consultative groups demonstrated that while the Student Outcome Statements are very good as a monitoring tool, they do not define the curriculum to the satisfaction of either schools or the community. The solution is for the *Curriculum Framework* to set out the content, skills and processes for each learning area with the Student Outcome Statements sequencing the conceptual development behind the content. Within the parameters of the *Curriculum Framework*, schools will have the flexibility to select what and how they teach in order for students to achieve the outcomes.

Schools are responsible for the implementation of the *Curriculum Framework* and the *Outcome and Standards Framework* within the context of agreed policies and guidelines and with the appropriate support. The Education *Department's Curriculum, Assessment and Reporting: Policy and Guidelines* (1998, p.3) mandates that "all government schools develop and implement learning programs that focus on each student achieving the outcomes that are consistent with the *Curriculum Framework* and the *Outcomes and Standards Framework*". Each school is expected to design an implementation pathway which takes into consideration its needs and experience. The timeline for implementation is five years, beginning in 1999.

The researcher has intimate knowledge of education in Western Australia that is drawn from extensive experience in schools and in senior positions in the Education Department since 1970.

Aims of the Study

The study has three aims in line with the model, which is outlined in Chapter three. One is to investigate teachers' receptivity to the use of Student Outcome Statements in Western Australian, government, secondary schools. Receptivity is defined in four aspects, Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. Two is to investigate the relationships between receptivity (as the dependent variable) and ten independent variables: non-monetary cost benefits, alleviation of fears and concerns, significant other support, feelings compared to

the previous system, shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities. Three is to investigate the relationships between receptivity and the independent variables in the context of the situation variables related to the school, department and teacher.

Summary of Model of Major Educational Change

The study investigates the relationships between teacher receptivity and teachers' beliefs about change and teachers' work organisations. Teachers' beliefs about change include such variables as personal non-monetary cost benefits, the alleviation of fears and concerns, perceived significant other support and perceptions of the new system compared to the previous system. These variables have been found to be related to teacher receptivity to major change in previous studies of the Western Australian education system, when other changes were implemented (Waugh & Godfrey, 1995, 1993 and Waugh & Punch, 1987, 1985). Teachers' work organisations include "the particular way teachers work together as a community" (Fullan & Hargreaves, 1991, p.15) and incorporate such aspects as the extent to which teachers share common goals, and help one another (Rosenholtz, 1991). This study identifies a number of variables from Rosenholtz's (1991) work which were found in those good schools known as "high consensus schools" and which were evident in their shared goals, beliefs and values binding them "to pursue the same vision" which was manifested by teacher collaboration. Rosenholtz (1991, p.1) conducted an in-depth study of elementary schools as a workplace and describes teachers' work organisations as "the meaning that the organization has for those who work within it". Her study demonstrated "how good schools can be at their best, and how bad they can be at their worst".

Planned educational changes, when successful, have a life cycle that can be divided into three stages, initiation, implementation and routinization (Waugh & Godfrey, 1995, 1993, Waugh & Punch, 1987, 1985). "Initiation refers to the processes and planning which lead up to and include the decision to proceed with the change... Implementation refers to the first use of the change on a system-wide basis in the

classroom... and routinization refers to whether the change becomes an ongoing part of the system" (Waugh & Godfrey, 1995, p.39). The present study is about teachers' responses to the implementation of Student Outcome Statements at the time when the system, having completed a two year trial period in selected schools (1994-1995), has decided to adopt the approach in all schools in the near future. The present study incorporates the beginning of the implementation stage and is about teachers' responses to the reform and their relationships with their work organisations. Those schools and teachers who have decided to use Student Outcome Statements are doing so in a voluntary capacity, as mandated implementation is being phased in over five years commencing in 1999.

The model that provides the theoretical framework for this study has been developed by combining and utilising variables from recent research on change (Waugh & Godfrey, 1995, 1993; Fullan & Hargreaves 1991; Hargreaves, Davis, Fullan, Wignall, Stager & Macmillan, 1991; Rosenholtz, 1991; McLaughlin 1990,1987; Waugh & Punch, 1987, 1985). The dependent variable is receptivity towards the use of Student Outcome Statements and is measured in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour (Ajzen, 1989). The independent variables are non-monetary cost benefits, alleviation of fears and concerns, significant other support, feelings compared to the previous system, shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities. The situation variables are: school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose to which Student Outcome Statements are put. The model indicates that there are moderate relationships between the dependent variable and the independent variables.

Significance

The study will add to knowledge in three ways. First, it will test an improved model of change at the beginning of the implementation stage. The model is based on existing research and combines variables from various studies (see Figure 3.1,

Chapter 3), including studies of major educational change in Western Australia and overseas (mainly USA and Canada). The model draws on research models, which have employed both qualitative and quantitative methods. The model to be tested improves on previous models and is intended to improve our understanding of teacher receptivity to major educational change in a centralised educational system.

Second, it will provide new data on teacher receptivity to Student Outcome Statements, a system-level change being implemented in Western Australian government schools. The implementation of Student Outcome Statements was voluntary during the period of data collection for the present study and highlights teacher receptivity during this phase leading into the mandatory implementation of Student Outcome Statements. No other system-level data have been collected in secondary schools during this period.

Third, the study will provide advice to educational decision-makers and administrators on how better to implement system-level changes in a centralised education system. The issues of change management during this period of implementation of Student Outcome Statements are critical to their success. Consequently, these data will provide administrators with in-depth knowledge of teachers' attitudes and receptivity to this specific change to help them administer the change better. The model employed by the Education Department for the implementation of Student Outcomes Statements is one of shared leadership, where the Principals, together with their Administrative Teams lead the change and empower teachers to commit to the change.

The data from the present study will provide a good data base and a rich source of knowledge about work organisations in secondary schools in Western Australia and it will identify characteristics which may be associated with teachers' receptivity to change. The implications of this research could be significant for administrators and educators, as they may be able to use the database to develop and refine processes for managing the implementation of educational changes, generally.

Limitations of the Study

This study has been constrained by the fact that there have been relatively few teachers willing to begin implementing Student Outcome Statements in secondary schools. There has been some confusion over the years as to the status of the Student Outcome Statements and whether the Education Department of Western Australia would in fact endorse them. The two-year trial itself only involved 25 senior high schools and within these secondary schools few teachers participated. although there is no documentation from which information can be obtained on the precise number of teachers who participated in the formal trial. The study has been further complicated by the changing timelines. The formal implementation period for the whole system for the *Curriculum Framework* and the *Outcomes and Standards Framework* has now been established and schools will progressively implement the changes over a five year period from 1999 - 2003. However, 126 valid questionnaires were completed and returned. The focus of this study continues to be the Student Outcome Statements, which were trialed in 1994 and 1995 and began to be implemented in some schools over that period and continue to be implemented. For the purpose of this study, the implementation period is taken as the period since the trial, until the collection of the data for this study in 1997. There is now a great deal of publicity and emphasis given to the implementation of the *Curriculum Framework*, both by the Curriculum Council and the Education Department of Western Australia. This was not the case in 1997 when these data were collected.

Further constraints to this study lie in the research model itself. Major educational change in a centralised education system like that in Western Australia is likely to be complicated. It would be extremely difficult, and it may be impossible, to fully understand the relationships between all the relevant variables. There are many complex variables affecting teacher attitudes towards change and it is not the intention to detail all these variables. However, the model attempts to isolate a number of the most important variables that will simplify the study and provide some guidance and general understandings.

The variables, too, are simplified and aspects isolated to make understanding easier. The dependent variable (receptivity towards the use of Student Outcome Statements) is measured in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour, in line with the simplified model presented by Ajzen (1989).

The independent variables are non-monetary cost benefits, alleviation of fears and concerns, significant other support, feelings compared to the previous system, shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, decision-making and teacher collaboration) and teacher learning opportunities. These, too, are measured separately in this study in order to simplify and understand their relationships with receptivity. The situation variables are: school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose to which Student Outcome Statements are put. These are like indicator variables because they are related to the independent variables and thus affect receptivity through their indirect relationships. This, too, simplifies the complex situations in order to make it easier to study.

The study is not a description of teacher attitudes in a qualitative sense, but an attempt to measure important variables in order to see the relationships between them. The study only applies to some teachers in government secondary schools in Western Australia and no attempt is made to generalise the results to all teachers. The study did not involve non- government schools.

Structure of the Thesis

There are eight chapters in this thesis. Chapter one describes the background and issues related to the implementation of Student Outcome Statements in Western Australian government secondary schools. The aims of the research, the significance and limitations of the study are presented and finally, a brief summary of the structure of the project is given.

Chapter two provides a review of the significant literature related to the implementation of change and teacher receptivity to system-wide change. A review is undertaken of major works that have, as their focus, school work organisations and their impact on how system-wide change has been implemented. An outline is also provided of major variables affecting teachers' receptivity to changes.

Chapter three describes a conceptual framework in the form of a model to assist in identifying the most relevant variables, which influence teachers' receptivity to the implementation of Student Outcome Statements. Predicted relationships between the independent variables, situation variables and teacher receptivity are discussed.

Chapter four gives an introduction to measurement (validity, reliability, creating a scale). The variables and instruments to be used in this study are presented. The trialing of the instrument, a teacher questionnaire, is discussed and the processes for developing a valid and reliable instrument are outlined. The dependent and independent variables are defined and the measurement of the variables is described.

Chapter five describes the procedure for the selection of the sample of teachers surveyed and discusses how the data were collected. Preliminary data analysis of the raw data in regard to receptivity to change is presented. This chapter is essentially qualitative and summarises the responses of the 126 teachers included in the analysis. It also includes cross-tabulations between the dependent variables and the school variables, between the dependent variables and the department variables and between the dependent variables and the teacher variables. A summary analysis is also presented of the open-ended comments, which some teachers included in their questionnaires.

Chapter six continues the analysis of the data and looks at zero-order correlations between the dependent variables and the group one independent variables.

between the dependent variables and the group two independent variables and between the dependent variables and the situation variables.

In Chapter seven, a multiple regression analysis is undertaken between the dependent variables and the group one independent variables, between the dependent variables and the group two independent variables and between the dependent variables and the situation variables.

Chapter eight contains the summary, conclusions and implications of the thesis. Implications for both practice and theory are explored. There is a discussion on how the change should be implemented, modified and improved. Implications for further research are presented.

CHAPTER 2
LITERATURE REVIEW

Introduction

An overview is presented firstly of major changes in the Education Department of Western Australia over the past decade in order to place the current change, reported in this study, in context. This context leads to the view that Student Outcome Statements are a system-wide, planned, educational change which is part of a wider agenda, initiated with the release in 1987, of *Better Schools: A programme for improvement*, by the Education Department of Western Australia. Hence, and secondly, a literature review relating to system-wide planned educational change and major variables affecting receptivity to change are presented. It has not been possible to include the entire relevant journal and other literature, as it is extensive. Consequently, there is a reliance on review and summary literature. Thirdly, a brief review is also provided of the literature relating to beliefs, attitude and behaviour intentions.

Historical Context in Western Australia

In 1987, the Education Department of Western Australia released a document called *Better Schools in Western Australia: A programme for improvement.* It was to be the beginning of a partial process of devolution, a shift from a centralised to a local decision-making model for a limited number of school aspects such as financial management, utilities management and teacher performance. During this period, schools were given greater responsibility for significant educational and financial decisions and were compelled to involve the community through the establishment of School Decision-making Groups. The era was characterised by a sense of excitement and liberation for some, yet others could not move beyond the frustration and confusion that such changes often bring. What became clear at the outset was that there was a lack of system-level frameworks and policies that could guide schools through this historic change. The system embarked on the development of frameworks, policies and guidelines which focused on maximising

flexibility at the local level, providing accountability at both the local and system level and generating confidence in the government school system.

The principles, which guided the development of these frameworks, were based on ensuring that the locus of control rested with the school. At the same time, the objective was to guarantee that schools remained part of a government school system and that they did not scatter as individual independent schools. Central to this process was the curriculum debate: curriculum delivery was to be determined at the school level, but the outcomes - the essential elements of the curriculum - which students were to achieve, were to rest with the centre, the Education Department. "As a consequence, the Education Department of Western Australia decided in 1990 to develop eight sets of student outcomes. The State School Teachers' Union of Western Australia endorsed the decision through the memorandum of agreement established in 1990" (Randall, 1997, p.196). Thus began the historic process of a productive, collaborative era which was to link with the national curriculum reform agenda initiated by the Federal Education Minister, John Dawkins, who highlighted the importance of the reform by stating that "our education and training systems should play an active role in responding to the major economic challenges now facing Australia" (Lokan, 1997, p.4).

The motivation for the curriculum reform in Western Australia came from a commitment by the senior executives of the Education Department to continue to further the devolution process. Whilst Western Australia participated enthusiastically in the development of the National Statements and Profiles in the 1990s, the prime objective was centred on developing the best possible outcomes, known locally as Student Outcome Statements. The program for the improvement of government schools initiated in 1987 depended on empowering the teachers in the classroom to make decisions which best suited their children in the context of a strong accountability framework. Whilst a solid and well-accepted accountability process had been established, it was weakened by the fact that the student outcomes for which teachers were accountable had not been defined.

One of the difficulties was that the timeline for the delivery of the Student Outcome Statements had become protracted and there was considerable uncertainty regarding their status, particularly in the political arena. The announcement by the government at the end of 1995 that a statutory curriculum body would be formed signalled a shift in culture for the Education Department of Western Australia. It would no longer control the development of curriculum in the state, but would work in partnership with all other stakeholders. In May 1996 the Minister for Education in Western Australia, Colin Barnett stated "The establishment of the Curriculum Council is one of the major educational decisions made by this Government. The Council offers the opportunity for partnerships between government and non-government school systems, schools and community groups, and primary, secondary and tertiary educators involved in Kindergarten to Year 12 curriculum developments" (Interim Curriculum Council, May, 1996, p.1).

Throughout 1996 and until the formation of the Curriculum Council in the latter part of 1997, the Interim Curriculum Council worked in partnership with all stakeholders to provide advice on the creation of the new authority, to provide direction for the future and commence curriculum development. During this sensitive and delicate process, the fate of the Student Outcomes Statements and their place within the new world was of critical importance to the progression of the Education Department's devolution agenda. From the outset, the Council made a commitment to the development of a framework, which would be outcomes oriented, and which then affirmed the approach taken by the Education Department. The intellectual investment made by the Education Department to the development of the Student Outcome Statements was recognised and that expertise was then shared with the other sectors in the development of the framework.

A decision was made by the Education Department to delay the release of the Student Outcome Statements until the release of the Curriculum Framework and a period of intense activity commenced in the Curriculum Directorate of the Education Department to refine the Student Outcome Statements so that they

would become the tool which government schools would use to implement the Curriculum Framework. The system's commitment was reinforced publicly in the *Plan for Government School Education 1998-2000* (1997). The first objective in the *Plan* states the intention to establish an outcomes approach to curriculum with clearly defined standards and the major strategy was the development of the Curriculum Improvement Program. The Program provides a comprehensive approach to implementing a system-wide educational change within a devolved system which articulates clearly defined parameters. This change management approach is described by Wildy (1997, p.2). "The most productive relationship between the school and the centre is one of pressure, support and continuous negotiation". In this case, the pressure from the Education Department was that the outcomes would be mandated and its support came in the form of provision of policies, guidelines, professional development and standards. Continuous negotiation manifested itself through the district offices where schools negotiated on how and at what rate they would implement the Student Outcome Statements.

The mechanism that supports this approach was further enhanced through the restructure in January 1998 of the Education Department of Western Australia. Central Office was only to be responsible for policies, guidelines, standards and major resources, whilst the schools, supported by the newly created District Offices, would be responsible for delivery, implementation and co-ordination. Schools would no longer seek assistance and support from Central Office, but from the District Offices, which for curriculum has proven to be a process that appears to be well accepted by schools. The final publication of the Student Outcome Statements and the Curriculum Policy on provision, assessment and reporting by the Education Department and the Curriculum Framework by the Curriculum Council in 1998 sets the scene for the formal implementation period for the next five years (1999-2003).

There is little doubt that the paradigm shift from an objectives driven approach to an outcomes based approach is the most significant change to take place in secondary schools since the introduction of the Unit Curriculum in 1988. The

implementation of the Unit Curriculum was inextricably linked with the implementation of the *Better Schools* (1987) document and confused both agendas in secondary schools. The change management process for the introduction of the Unit Curriculum was one of a top down approach where schools were expected to implement the initiative with little support from the system. Confusion, resistance and a sense of betrayal of teachers by the Education Department characterised this era and marred the potential for the introduction of an outcomes oriented approach. Schools struggled to come to terms with a devolution agenda which had not defined its parameters and attention was focused on developing immediate solutions to immediate problems, rather than focusing on long term solutions such as the development of the essential elements of the curriculum - the Student Outcome Statements. It has taken over ten years for the Education Department of Western Australia to fully commit to this new mode of curriculum delivery and this commitment is now enshrined in legislation for all sectors through the Curriculum Framework and the mandates of the Curriculum Council of Western Australia.

Wildy (1997, p.1), in a paper commissioned by the Curriculum Directorate of the Education Department of Western Australia, drew on the work of Berman and McLaughlin (1978) and stated "The adoption of the Curriculum Framework together with the Outcomes and Standards Framework is a system-wide curriculum initiate. Like any change process, it can be viewed as three overlapping phases: initiation, implementation and institutionalisation. A model of implementation consistent with a developing education system is one that places as much power and ownership as possible in the hands of those who carry out the change." In her discussion about the implementation of change within a devolved system, she focuses on the establishment of clear parameters by the centre, in this case the Central Office of the Education Department, and quotes Fullan (1993) who states "The answer lies in a blend of central policy setting and school-based control of implementation" (Wildy, 1997, p.2). She highlights also that partnerships make a difference and again quotes Fullan (1991). " Collaboration and

close interaction among people involved in the change are characteristics of all successful change processes" (Wildy, 1997, p.3).

Wildy (1997) talks about the need to develop a flexible approach to cater for the needs of individuals and different groups because Western Australian government schools are being asked to implement changes that will make a fundamental difference to the improvement of student learning outcomes. The Education Department's implementation strategy that is planned over a five-year period is based on sound principles of effective change management.

In a recent paper. Horan (1997 p.1) comments on teachers' attitudes to Student Outcome Statements and feels that "the concept of Outcome-Based Education (OBE) has been hovering like a spectre on the periphery of the Western Australian Education scene since 1989. Those directly involved in education including teachers, administrators, central office staff and district office personnel, exhibit the entire spectrum of attitudes towards and perceptions about Outcome-Based Education". Some teachers have manifested their commitment by involving themselves in action research and using the draft Student Outcome Statements in their programs and assessment. Others have hardly engaged with the Student Outcome Statements and fall into a group of teachers who would never embrace such change unless it was mandated. Some teachers felt that the change would never happen at all.

System-wide Planned Educational Change

Waugh and Punch (1985) found that their review of contemporary literature on planned educational change "showed a shift in research emphasis from the adoption stage to the implementation stage (Berman & McLaughlin, 1978; Fullan & Pomfret, 1977; Gaynor & Du Vall, 1977; Paul 1977; Zaltman, Florio & Siorski 1977; Bennis, Benne, Chin & Corey, 1976; Baldridge & Deal, 1975). This is because it has become necessary to understand why some change efforts fail and others are successful" (Waugh & Punch, 1985, p.114). They further added, "the journal literature suggests that changes be studied and managed in three distinct

stages. These are the initial or adoption stage, the implementation stage and the routinisation or incorporation as a permanent feature of the system stage".

Waugh and Godfrey (1995) examined major reviews of the change literature. "A strong reliance was placed on reviews by Conley (1991), Fullan (1991) and Waugh and Punch (1987)" (Waugh and Godfrey, 1995, p.41). They incorporated or modified, as appropriate, the variables related to receptivity to change from these studies into their model. In order to strengthen the framework of the model, they also incorporated the ideas of James (1991) and Sarason (1990) who reported many change studies and their own experiences of change with teachers over many years. These major reviews focused on different aspects of change, including teacher participation in decisions affecting the change process; state level policy initiatives; and state funding to provide reforms in education. Waugh and Godfrey (1995) also drew on the early work of McAtee and Punch (1979). They studied the relationships between teachers' attitudes towards a major planned organisational change, the Achievement Certificate in Western Australian secondary schools (as the dependent variable) and, their knowledge of the change, participation in the change and their general attitudes towards education (as the independent variables). It was concluded that the key factors that influence teachers' receptivity to change were general attitudes to education, knowledge about the change and the extent to which teachers participated in the change. These factors accounted for about 27 percent of the variance in attitudes to change (McAtee & Punch, 1979).

Waugh (1994) signalled that one of the limitations of his study was that, although he had incorporated many areas which affected teacher receptivity to change, he did not know whether all the main areas had been included. He states that "it is probable that new areas relating to school culture and mutual adaptation will have to be researched for inclusion" (Waugh, 1994, p.82). In order to add to the present study, in the context of Waugh's (1994) comments, the works of Horan (1997): Wildy (1997); Wallace and Wildy (1995); Fullan & Hargreaves (1991); Hargreaves, Davis, Fullan, Wignall, Stager & Macmillan (1991), Rosenholtz (1991), Little

(1990, 1982), McLaughlin (1990, 1987), McLaughlin, Talbert & Bascia (1990), Fullan (1989); Nias, Southworth & Yeomans (1989) were reviewed and the model adapted to incorporate the significant variables found in their studies, which affect change implementation for teachers. These studies highlighted the critical role work organisations and work cultures play in enabling teachers to implement change. These studies found that in schools where collaborative cultures of trust and support existed, where there was openness and a willingness to encourage risk taking, where teachers had shared opportunities to learn, where mutual and professional support existed, change was more likely to occur and be embedded in daily practice. Fullan and Hargreaves (1991, p.13) declare that "however noble, sophisticated or enlightened proposals for change and improvement might be, they come to nothing if teachers don't adopt them in their own classrooms and if they don't translate them into effective classroom practice...the heavy burden of responsibility for change and improvement in schools ultimately rests on the shoulders of the teachers".

Variables Affecting Teacher Receptivity to Planned Change

The present study aims to investigate teachers' receptivity to the use of Student Outcome Statements in Western Australian government secondary schools and to investigate the relationships between receptivity, as the dependent variable, and a number of independent variables and situation variables in line with the model outlined in Chapter three. Receptivity is defined in four aspects, Overall Feelings, Attitudes, Behaviour Intentions and Behaviour in line with the model. The first group of independent variables are a selection taken from the studies done by Waugh and Godfrey (1995, 1993); and Waugh and Punch (1987,1985): non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system. It was suggested by Waugh and Punch (1985, p.120) that "since only about one-third of the variance in Overall Feelings can be accounted for by the independent variables used, future research should aim to identify additional independent variables important in influencing this aspect of teacher receptivity". The inclusion of this second group of independent variables is an attempt to build on their recommendation and this

group is a selection taken from the work of Rosenholtz (1991) and Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991): shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities. The situation variables are school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purposes to which Student Outcome Statements are put. Although the inclusion of situation variables in the Waugh and Punch (1985) study demonstrated that they were not important systematic influences on teacher receptivity, they were used in the Rosenholtz (1991) study and the Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991) study. In Western Australia, McAtee and Punch (1979) found that the situation variables accounted for about 10 percent of the variance in teachers' attitudes towards the Achievement Certificate system.

Studies by Waugh and Godfrey (1995, 1993) and by Waugh (1994) and Waugh and Punch (1987, 1985) into teachers' receptivity to system-wide educational change examined the literature on planned educational changes which suggested that "when successful", planned educational changes "have a life cycle that can be divided into three stages, initiation, implementation and routinization... Initiation refers to the processes and planning which lead up to and include the decision to proceed with the change... Implementation refers to the first use of the change on a system-wide basis in the classroom... and routinization refers to whether the change becomes an ongoing part of the system" (Waugh & Godfrey, 1995, p.39).

Waugh and Godfrey (1995, p.50) suggest that "during the initiation stage, administrators should sell the change to the teachers in terms of the general variables related to receptivity in the implementation stage". They developed a model which was based on previous research and literature on system-level change and identified six critical variables: non-monetary cost benefits, practicality in the classroom, alleviation of fears and concerns, teacher participation in decision-making, significant other support and feelings compared to the previous system.

The theoretical framework of Rosenholtz (1991) and Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991) complements the Waugh and Godfrey (1995) model. Rosenholtz (1991) describes the work organisations of teachers which are most conducive to the acceptance and implementation of change. Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991, p.xi) examined the implementation of the destreaming policy in Ontario and concluded that "anxieties associated with changing practice are reduced when teachers work in collaborative cultures of trust and support, grounded in action as well as talk. When teachers can speak openly and frankly with their colleagues about their concerns, when their feelings are validated by others and when mutual support and encouragement mark each working day, the implementation of a particular policy change may appear much less dramatic and intrusive than in other settings. This is especially true when teachers have concrete, current and collective practical experience related to the changes concerned".

Rosenholtz (1991, p.4) in a study of elementary schools in the USA, contends that "there are shared aspects of work that cut across individual biographies with sufficient force to explain the pattern of beliefs and behaviours in schools... teachers' attitudes, cognitions, and behaviour have less to do with the individual biographies teachers bring with them to the workplace than with the social organisation of the workplace itself - social organisations that are not characteristics of individual teachers but that teachers have helped shape; social organisations that then have consequences for teachers' perceptions and behaviours". Rosenholtz identified five variables which are associated with schools which are 'moving' (improving in achievement) and have a work organisation which is conducive to change. It is suggested that teachers will respond in a positive way to change and reform if the environment in which they work fosters a work organisation which supports shared goals; teacher collaboration; teacher learning; teacher certainty and teacher commitment.

Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991, p.x) drew on the work of Rosenholtz (1991), Little (1982) and Fullan (1989) stating that "we knew

that the workplace culture of a school may be vital to the success or failure of change in schools" when they looked at the way in which secondary schools had implemented the policy of "destreaming" and the work organisations which supported the change. In their study of *Secondary School Work Culture and Educational Change*, Hargreaves, Davis, Fullan, Wignall, Stager, and Macmillan (1991, p.xii) found that "collaborative work cultures in secondary schools create and sustain trust, risk, openness, opportunities to learn, shared language and common experience that make educational changes less abstract and less threatening to individual members of the school community".

McLaughlin (1987, p.172) states that "...policy cannot always mandate what matters to outcomes at the local level; individual incentives are central to local responses; effective implementation requires a strategic balance of pressure and support; policy-directed change ultimately is a problem of the smallest unit". She cites Pressman and Wildavsky (1984) who, she said, "showed that implementation dominates outcomes - that the consequences of even the best planned, best supported, and most promising policy initiatives depend finally on what happens as individuals throughout the policy system interpret and act on them" (McLaughlin, 1987, p.172).

In reviewing the Rand Change Agent Study (1973-1978), McLaughlin (1990, p.12) states that "the study demonstrates that the nature, amount, and pace of change at the local level was a product of local factors that were largely beyond the control of higher-level policymakers". She raises the issue of the contribution which teacher interaction has to successful implementation and states "if teachers lie at the heart of successful efforts to enhance classroom practices, then the professional networks that engage teachers comprise promising vehicles for change" (McLaughlin, 1990, p.15).

Fullan and Hargreaves focus on the work of Little (1990), Rosenholtz (1991), Nias, Southworth and Yeomans (1989) and Ashton and Webb (1986) to highlight the importance of teacher collaboration as a critical element in successful schools

as "collaborative cultures are explicitly committed to continuous improvement, to searching out ways of improving practice whether these be found inside or outside the school" (Fullan & Hargreaves, 1991, p.52).

Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991, p.xi) investigate the organisational structures of secondary schools which add to the motivation for the current study. It is suggested that "most secondary schools are failing to meet the challenges of a complex and rapidly changing postmodern world because they are clinging to crumbling structures of modernity. Their curricular and organisational structures are bureaucratic, hierarchical, overtly specialised, inflexible, and unwieldy". The study suggests that the conflicts and differences between such subcultures like subject departments may have a stronger influence on teaching, learning and teachers' adaptation to change than what might occur across the culture of the school as a whole. He believes that secondary schools have such complex settings that common elements which may be attributed to them may be exaggerated.

Attitudes, Beliefs and Behaviours

This literature review which deals with the variables affecting teacher attitude to system-wide planned educational change draws on the work of Rosenholtz (1991), Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991) Fullan and Hargreaves (1991), Waugh and Godfrey (1995, 1993); Waugh (1994); McLaughlin (1990, 1987); Waugh and Punch (1987, 1985) and McAtee and Punch (1979) and incorporates attitude studies linking attitudes, beliefs and intentions (Ajzen, 1989). Ajzen (1989) extended the theory by Fishbein and Ajzen (1975) which captures an individual's motivation by using the concept of intention to perform a behaviour. The extended theory is determined by three conceptually independent determinants: attitude towards the behaviour, which is influenced by behavioural beliefs that link behaviour to outcome; perceived social pressure on the individual to perform the behaviour which is influenced by normative beliefs; and perceived level of ease or difficulty of performing the behaviour which is influenced by control beliefs. According to this theory, receptivity is defined by Overall

Feelings towards the proposed change, Attitudes towards the proposed change and Behaviour Intentions towards the proposed change. A fourth aspect, that of Behaviour, is added in the present study.

The studies by Waugh and Punch (1985, 1987) and Waugh and Godfrey (1993, 1995) show a high correlation between Attitudes and Behaviour Intentions. Waugh (1994) applied the model, involving Attitudes and Behaviour Intentions, which he developed in 1983 to a system-wide planned change, the Certificate of Secondary Education in Western Australian secondary schools. The study showed that the independent variables accounted for about 56% of the variance in teachers' receptivity to a system-wide change. Waugh and Punch (1987) reviewed the literature concerning teacher receptivity to system-wide educational change and found that the most important variables are: teachers' personal cost benefit, the practicality of the change, alleviation of fears and concerns, perceived expectations and attitudes towards the change, perceived school support for the change and general beliefs and attitudes towards education and the previous education system.

Waugh and Godfrey (1993) in a study dealing with teacher receptivity to system-wide planned change, the Unit Curriculum in Western Australian secondary school, developed their model further. The study showed that 56% of the variance in teachers' attitudes to the change was accounted for by the predictor variables: perceived non-monetary cost benefits by the teachers, perceived participation in school and classroom decision-making, perceived support for the change by significant other, and teachers' feeling towards the previous educational system. The study reinforces the view that there are fundamental variables common to all system-wide planned changes. These studies are particularly relevant to this study, as they were all conducted in Western Australia.

In the present study teacher receptivity involves teachers' beliefs, attitudes, behaviour intentions and behaviour, as they have developed while using the Student Outcome Statements. These have been chosen because previous research supports their inclusion. Behaviour is added to extend the model and bring all these variables together in one study.

Summary

The review of the literature begins by providing an historical overview that develops the context for the change described in this study. The overview clearly portrays that the study is one of system-wide planned educational change which had its origins in the Education Department of Western Australia with the release of *Better Schools* in 1987 which signalled a shift from a centralised to more local level decision-making. The consequential process of the development of policies and guidelines led to the development of the essential elements of the curriculum referred to as the Student Outcome Statements, the subject of the present study.

Next a review of literature on system-wide planned educational change has been undertaken with a focus on the implementation stage of the change. A number of major works are explored which have studied factors that influence teacher receptivity to change in the implementation stage. The significant factors that influence this study draw on the work of Rosenholtz (1991), Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991) and Waugh and Godfrey (1995, 1993) and Waugh and Punch (1987, 1985).

The next section outlines the variables affecting teacher receptivity to system-wide planned educational change. The most significant variables from the Waugh and Godfrey (1995, 1993) research are selected for this study, such as non-monetary cost benefits, alleviation of fears and concerns, perceived support from senior staff and feelings compared to the previous system. Additional variables are included from the Rosenholtz (1991) and Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991) study, such as shared goals (shared teaching goals and cohesiveness), teacher collaboration (team teaching, involvement in decision-

making and teacher collaboration) and teacher learning opportunities. A number of situation variables have also been included, as some of the studies indicated that there were interesting relationships to be explored. The model that is outlined in Chapter three defines receptivity in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour.

CHAPTER 3
THE MODEL AND THE PREDICTED RELATIONSHIPS BETWEEN THE VARIABLES

Introduction

There are many factors that influence how teachers may react to changes generated by an education system, or how employees of any organisation react to and manage change. An education system comprises many complex areas including schools, administrators, teachers and students. In addition, there are layers of administration and control, which vary within the system depending on the devolution of power and decision-making, from the centre to the local level. These layers comprise complex interactions with Federal and State Government bodies, parent associations, union groups, community organisations, tertiary bodies and other sectors such as the catholic and independent groups of schools. It would require a complex process to analyse all the relationships between variables that may influence teachers' receptivity and actions towards change. In order to simplify the problem, a model has been developed which describes some important relationships between the variables. Although the creation of a model may be seen as somewhat artificial, it serves as a useful tool, in a study such as this, to show the main variables of interest and how they may be related. This chapter presents a general model of teacher receptivity to change to illustrate the relationships between the most important variables influencing the receptivity of teachers in government secondary schools to a system-wide planned educational change, and applies it to a specific change, the use of Student Outcome Statements.

The Model

The model that provides the theoretical framework for this study has been developed by combining and utilising variables from recent research on change (Rosenholtz, 1991; Fullan & Hargreaves 1991; Hargreaves, Davis, Fullan, Wignall,

Stager & Macmillan, 1991; McLaughlin, 1990,1987; Waugh & Godfrey, 1995, 1993; Waugh & Punch, 1987, 1985). The model suggests a correlation between the components of the dependent variable, teacher receptivity to change: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. In particular, it suggests that Overall Feelings influence Attitudes that, in turn, influence Behaviour Intentions and Behaviour (Ajzen, 1989). The model further suggests that teacher receptivity to change is related to two groups of independent variables: one group relating to personal variables associated with the change (Overall Feelings, Attitudes, Behaviour Intentions and Behaviour) and the second relating to interaction between teachers as variables associated with the change (see Figure 3.1).

This study assumes that teachers' receptivity towards a system-level planned educational change, such as the implementation of Student Outcome Statements, will vary. The study suggests that a significant amount of this variation in teachers' receptivity can be explained by a number of independent variables. The group one independent variables are non-monetary cost benefits, alleviation of fears and concerns, significant other support, feelings compared to the previous system, and the group two independent variables are shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities.

The model suggests that there are situation variables concerning schools, school departments and teachers, which are related to the independent variables and which, in turn, are related to teacher receptivity to change. It is expected that the situation variables will be correlated with teacher receptivity, and explain extra variance not explained by the independent variables. The situation variables are school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purposes to which Student Outcome Statements are put.

This model was chosen in preference to other research approaches becuase it has been used successfully in Western Australia to investigate system-wide curriculum

changes (Waugh & Godfrey, 1995, 1993; Waugh 1994 and Waugh & Punch, 1987, 1983).

<table>
<tr><th>INDEPENDENT VARIABLES (GROUP 1)</th><th>INDEPENDENT VARIABLES (GROUP 2)</th><th>SITUATION VARIABLES</th><th>DEPENDENT VARIABLE</th></tr>
<tr><td>non-monetary cost benefits</td><td>Shared goals
• shared teaching goals
• cohesiveness</td><td>School
• socio-economic status
• size
• location</td><td rowspan="4">Teacher receptivity towards the new system (measured in four aspects)
• Overall Feelings
• Attitudes
• Behaviour Intentions
• Behaviour</td></tr>
<tr><td>alleviation of fears and concerns</td><td>Collaboration
• team teaching
• involvement in decision-making
• teacher collaboration</td><td>Department
• type
• size</td></tr>
<tr><td>significant other support</td><td>• Teacher learning opportunities</td></tr>
<tr><td>feelings compared to the previous system</td><td></td><td>Teacher
• age
• experience
• status
• sex
• use of Student Outcome Statements
• purposes of Student Outcome Statements</td></tr>
</table>

Figure 3.1: Model of teacher receptivity to the use of Student Outcome Statements.

Predicted Relationships between Receptivity and the Group One Independent Variables

It is expected that the most important relationships between the independent and dependent variables will be those which are linked to teachers' beliefs, that is, group one variables. Teachers will be receptive to the change to Student Outcome Statements if they perceive that the benefits of the change will outweigh any difficulties, if they believe Student Outcome Statements compare favourably with the previous system (Unit Curriculum), if they perceive that there is support from significant others (such as the principal) and they believe their concerns about the implementation will be addressed and that they will have the opportunity to participate in making decisions. Waugh (1994) reported that teacher receptivity to the implementation of a system-wide change would have increased if more opportunities had been created by administrators for teachers to participate in decisions about the change. "Taking away the option for teachers to participate, when teachers expected to have more influence, worked to decrease teachers' receptivity to the change" (Waugh, 1994, p.90). Group two independent variables are likely to have a less direct influence. Teachers may share teaching goals, may collaborate well, enjoy team teaching and agree on outcomes, but, as a group, they might not support the specific change to Student Outcome Statements. Their actions will be more directly associated with their own beliefs about the efficacy of the change rather than with the working environment. Thus, it is expected that there will be a moderate positive relationship between the group one variables and receptivity. The more positive the group one independent variables, the higher the receptivity to the change. The more negative the group one independent variables, the lower the receptivity to the change.

Significant support from others is expected to have a moderate positive relationship with teacher receptivity. If the principal, most teachers and close colleagues support the change, then it is expected that teachers will be more receptive to the change. Conversely, if the principal, most teachers and close colleagues do not support the change, then teachers will be less receptive to it.

Teachers will be more receptive if support is forthcoming from key personnel (the principal and deputy principal, other teachers including close colleagues, district and learning area superintendents). They will feel that they are working together in a collegiate and collaborative environment towards common goals and will feel that others support them in their teaching. There is less likely to be internal conflict among staff, if they are working in a supportive environment and, consequently, teachers feel that they can work in an atmosphere of trust.

If teachers feel that there are mechanisms and supports which contribute to the alleviation of their fears and concerns about the change, such as regular meetings, senior persons available to advise and having the opportunity to resolve issues informally at the school, then it is expected that this will enhance their receptivity to the change. On the contrary, if these are not available, it is highly likely that they will be less receptive. The greater the alleviation of fears and concerns, the higher the receptivity to the change and the less the alleviation of fears and concerns, the lower the receptivity to the change. In the current environment many teachers do not have the background or experience to implement major classroom change without assistance from senior persons in the schools or being able to debate issues with their peers. Teachers need to feel supported and able to express their opinions in an environment that is built on trust. They need to be able to develop their professional knowledge without fear of recrimination and need to resolve any issues in a collegiate and cooperative way, particularly, when there is change, as most staff lack experience in the new area and have little expert knowledge of the change.

It is expected that if teachers have positive feelings about the change compared to the previous system they will be more likely to be receptive to it. If they feel that the use of Student Outcome Statements allows them to provide for better student learning, manage their classrooms better, provide more relevant content, address the needs of individual students better, make better judgement about student learning achievement and report more effectively on student achievement, then they are expected to be more receptive to the change. If they feel that the use of

Student Outcome Statements does not improve student learning achievement compared to the previous system, it is expected that they will not be receptive to the change. Teachers are focused on student learning and are motivated by the extent to which the students progress. They generally will commit to processes that enhance student learning.

It is expected that there will be a moderate positive relationship between receptivity to the change and non-monetary cost benefits. That is, the higher the perceived non-monetary cost benefits to the teacher in implementing the change in terms of more efficient classroom management, better assessment and more focus on outcomes, the more positive the receptivity to the change and the lower the perceived non-monetary cost benefits to the teacher in implementing the change, the less positive the receptivity to the change. If teachers feel that such issues as extra workload and extra responsibility are balanced by their satisfaction with teaching, better student classroom learning and general benefits for the student, it is expected that this will enhance their receptivity to the change. On the other hand, if the benefits are not obvious to them, it is highly likely that they will be less receptive. That is, if extra work load associated with a change to Student Outcome Statements is not outweighed by greater satisfaction with teaching, if extra work is to the detriment of home life, if it is not perceived to result in better student learning, if total problems associated with implementation outweigh total benefits and extra responsibility for student assessment affects workloads, teachers are likely to be less receptive to the change.

Predicted Relationships between Receptivity and the Group Two Independent Variables

It is expected that collaboration will have a weak positive relationship with the dependent variable, as some research cited focuses on this relationship. If teachers share teaching ideas with other teachers, if they can obtain advice from other teachers, if they can obtain support and give support when they or their colleagues are having difficulties, if they engage in and enjoy team teaching and if they participate in decision-making related to the use of Student Outcome

Statements, then it is expected that they will be receptive to the change. Conversely, if they do not share teaching ideas and resources with other teachers, do not enjoy or value team teaching, do not participate in decision-making relevant to Student Outcome Statements and cannot obtain support or advice about problems they experience, it is likely that they will be less receptive to the change. The support provided to teachers who work in a collaborative work environment assists them to approach change in a positive manner.

Similarly, if teachers share goals, with other teachers, about the outcome students should be achieving, if the values and philosophy of education are similar to those held by their colleagues and they share a high level of commitment to student learning, if there is a sense of cohesiveness amongst the staff, then it is expected that teacher receptivity to the change will be positive. Conversely, the research does not suggest as strong a correlation between receptivity to change and sharing of goals as it does with collaboration (Rosenholtz, 1991). However, there is expected to be a positive relationship as Student Outcome Statements focus on student learning achievement and involve sharing of goals at a department and school level. The success of Student Outcome Statements is partially dependent on teachers having a shared understanding of their meaning in order to ensure that they can make valid and reliable judgements. The quality of the assessment and reporting of the Student Outcome Statements is dependent on this shared understanding. Consequently, it is critical that teachers share their goals and understandings as they progress with the implementation of Student Outcome Statements.

It is expected that there will be moderately positive relationships between teachers' learning opportunities and their receptivity to change. If teachers are presented with new ideas that they are willing to implement, if senior teachers work with teachers to improve their skills, if teachers are encouraged to try out new ideas that improve student learning, they are expected to be more receptive to the change. Conversely, if senior teachers do not work with classroom teachers to improve their skills or encourage them to try out new ideas to improve student

learning, or do not provide them with opportunities or support materials, teachers will not be receptive to the change. The implementation of Student Outcome Statements changes the focus from an inputs approach used in the Unit Curriculum to an outcomes approach. This shift in focus requires curriculum leadership particularly from senior teachers in order to work through the issues and problems associated with making judgements about student learning, providing appropriate learning programs, developing appropriate assessment approaches and constructing innovative ways of reporting to the students, the parents and to their fellow colleagues. For many teachers these approaches, skills and tasks are new and they need to be provided with opportunities to learn, to practise, to share with others and they need to be able to take risks, make mistakes and learn constructively from these mistakes.

Predicted Relationships between Receptivity and the Situation Variables

It is expected that there will be small positive relationships between the dependent variable and the situation variables. The situation variables are expected to explain less variance than the group one and group two independent variables. The demographic variables relating to the school, such as socio-economic status, size and location, are not expected to have a strong relationship with the dependent variable. However, it is expected that the type and size of department may have an important influence on the teachers' receptivity to change through their effect on the independent variables. If the department's learning area is English or Mathematics, it is expected that they would have had a longer involvement with Student Outcome Statements and hence improve teacher familiarity and receptivity. The smaller the department, the more likely it is that most teachers would be involved, able to support each other and thus increase the likelihood of receptivity to Student Outcome Statements.

It is expected that the teachers' decision to participate will have an important relationship with the dependent variable. If teachers have been using Student Outcome Statements across various year levels, or, more particularly across a

department or a whole school, for some time, if they were involved in the trials and if they are using the Statements for various purposes, such as monitoring achievement, assessment, reporting, planning programs or planning school development, then it is expected that they will be more receptive to the change. Conversely, if they have not participated previously in any of these activities, they will not be expected to be so receptive.

It is expected that teachers' experience will have a small positive relationship with the dependent variable. If the teachers have a large number of years of teaching experience, it is expected that they will be more receptive to the change. Conversely, if they have less experience, they are likely to perceive more difficulty in coping with the change and will be less receptive. More experienced, and therefore, older teachers, are generally reluctant to take on change immediately. However, it is also true that the more experienced and older teachers have a vast amount of knowledge. They have experience in collaborating with others and know how to obtain support and seek out appropriate resources. Less experienced, younger teachers often do not have the baggage from previous system and are more willing to try out new approaches. However, they often lack the knowledge and professional expertise to work their way through complex educational change, particularly, such change that affects all aspects of teaching and student learning. Other teacher variables, such as sex and status, are not expected to be significant except in so far as they interrelate with experience. The situation variables are expected to be related to the independent variables and hence to the dependent variables. For example, in bigger schools there may well be more team teaching, hence the higher the receptivity.

Summary

Teacher receptivity to Student Outcome Statements is expected to be related to many variables in a complex way, as there are many factors which influence how teachers may react to changes generated by an education system. The model created in this study, serves as a useful tool to show the main variables of interest and how they may be related. This general model of teacher receptivity to change

illustrates the relationships between the most important variables influencing the receptivity of teachers in government secondary schools to a system-wide planned educational change, the use of Student Outcome Statements.

Teachers' receptivity to Student Outcome Statements, measured in four aspects, is expected to be related to the sequence of Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. The model suggests a correlation between the components of the dependent variable, teacher receptivity to change: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. In particular, it suggests that Overall Feelings influence Attitudes, which, in turn, influence Behaviour Intentions and Behaviour.

Teacher receptivity to Student Outcome Statements is expected to be related to:

1. four personal independent variables (involvement in decision-making, non-monetary cost benefit, alleviation of fears and concerns, significant other support and feelings compared to the previous system) moderately and positively;
2. six group two independent variables {shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities} weakly and positively; and
3. three situation variables (school, department and teacher) through their relationship of the situation variables with the independent variables.

The measurement methodology is described more fully in Chapter four.

CHAPTER 4
INSTRUMENT, VARIABLES AND MEASUREMENT

Introduction

This chapter describes and discusses the questionnaire, its validation, how the variables have been constructed, the types of scale used to measure the variables, and the definition and measurement of each variable. The items in the questionnaire are related to the definition of each variable and the variables making up the questionnaire derive from the model to be tested.

Trialing of the Questionnaire

It was considered important to trial the questionnaire in order to check that the items made sense to the teachers, to ensure that the language was appropriate and that the time that it would take to complete was manageable for teachers. It was imperative to ensure that the structure, format and presentation were designed well, in order to maximise teacher responses. The questionnaire was trialed using 15 secondary curriculum consultants who had extensive experience working in secondary schools with teachers who were using the Student Outcome Statements. A number of these consultants were experienced in designing instruments for use with teachers in schools and offered comments based on their experience. The original questionnaire was modified according to the feedback received from the trial. They suggested using fewer items and that eliminating repetitive items would make the completion of the questionnaire easier. The questionnaire was reduced from 160 items to 129 items. The respondents also made useful suggestions relating to the numbering of the questions, the sequencing of the sections and general editing. After the editing, the questionnaire could be completed in twenty to twenty-five minutes.

Seven experienced secondary principals were asked to provide further feedback on the questionnaire. They suggested changing the wording in the headings, as they believed teachers could react negatively to some of the language that was used.

For example, the title of the questionnaire was changed from 'teacher receptivity to system-level change' to 'teachers' attitudes towards the use of Student Outcome Statements'. Other changes made are now explained.

Scale

The first draft which was trialed was designed with a five point scale ranging from 'strongly agree' to 'strongly disagree' with 'unsure' being the middle category. However, the advice received from the consultants, particularly the measurement experts, was that the scale should be modified to a four-point scale with a fifth option 'unable to comment' added and the 'unsure' option deleted. The unsure category was deleted because Dubois and Burns (1975) reported that many respondents use a neutral category when they do not hold neutral feelings and this 'unsure' category tends to attract responses such as 'don't know', 'don't care' and 'don't want to answer'. This makes interpretation of the data difficult due to lack of clarity. In addition, it was suggested that some items be reversed throughout the questionnaire to overcome the fixed response syndrome in a long questionnaire.

Demographics - Section A

This section was generally well received. Some minor modifications were made which enhanced readability. For example, in response to the question 'how many teaching staff in your department?' the range of answers was modified from nine alternatives to five. Instead of asking questions such as 'what is your teaching status?' the heading was simply changed to 'teaching status', 'years of teaching experience' and 'age'. Use of the term 'Manual Arts' was changed to 'Design and Technology', as the feedback suggested that teachers were more comfortable with this terminology.

Student Outcome Statements - Section B

The respondents found this section easy to complete and only minor modifications were made in response to the feedback. The number of options in item 11 that related to the extent of use of the Student Outcome Statements was

reduced from four to three. In item 12, which refers to who is using the Student Outcome Statements, the number of options was reduced from six to four as it was for item 13 which referred to who made the decision to begin using Student Outcome Statements in the school. Item 14, which referred to the Education Department of Western Australia's *Gifted and Talented Program*, was simplified to elicit a Yes/No answer. Item 18 in the trial questionnaire, which referred to the purpose of the use of the results of the Monitoring Standards in Education Program, was deleted as it was not considered to be of sufficient relevance to this study.

Beliefs and Behaviours - Section C

The heading 'feelings towards the previous system compared to SOS' was expanded to 'feelings towards the Unit Curriculum compared to Student Outcome Statements' and the number of items reduced from 14 to 10 as they were considered to be repetitive. The heading 'non-monetary cost benefit' was clarified and changed to 'benefits of Student Outcome Statements' and some editorial modifications were made. The heading 'Overall Feelings towards SOS' was changed to 'attitudes towards Student Outcome Statements' and the number of items reduced from seven to five. The heading 'significant support for SOS' was changed to 'support for Student Outcome Statements'. Wording such as 'my best teacher friend' was changed to 'my closest colleague at this school'. The reason these changes were made was because the respondents felt that the wording was not clear and provided the alternatives to assist in developing current 'user-friendly' language for teachers.

The group of items associated with 'Behaviour Intentions towards Student Outcome Statements' was reduced from eight to five. The response categories for the group of items under the heading 'behaviours' was changed from 'very often', 'often', 'rarely', 'never' to 'often', 'sometimes', 'rarely', 'never'. This provided a much clearer differentiation between the two positive categories and assisted in more accurate measurement of the items.

Attitudes towards Student Outcome Statements - Section D

The instructions relating to the completion of this section using semantic differentials were simplified, making it more 'user friendly'. The initial instructions were lengthy and tended to confuse the reader and were replaced with a simple sentence that stated. 'As you read down the list of adjective pairs, place a cross in the box on the continuum that best describes how you feel about Student Outcome Statements'.

Work organisations - Section E

The items (77-86) referring to 'teacher collaboration' were reduced from 13 to 11 as they tended to be repetitive and the order of the items changed so that there were two clear categories, the first relating to the department and the second relating to the whole school. The items in the draft questionnaire related to 'teacher socialisation' were deleted, as they were not significantly aligned to the aims of the study. Repetition was the main problem with this section and the items (96-107) referring to 'cohesiveness' were reduced from 18 to 12. The items referring to 'team teaching' were reduced from nine to seven and the items referring to 'teacher learning opportunities' were reduced from 17 to 14 again reducing repetition and providing clarity and consistency.

Open ended comments

The feedback suggested that some teachers welcomed the opportunity to make comments about the data, the instrument, the changes and about Student Outcome Statements and that more space would be appreciated. This section was designed to add a deeper qualitative dimension to the study by allowing teachers to express themselves in their own works and to state how the system could be improved to produce better outcomes and to manage the change better. This modification was incorporated into the final version of the questionnaire.

The Questionnaire

The questionnaire was designed in line with the model (see Chapter three and Appendix A) and included scales which attempted to measure the variables in the

model. These variables were identified in the literature as related to teacher receptivity to system-level change. The items of the questionnaire utilise a four point scale (with '4' being positive and '1' being negative) in order to maintain consistency across the whole questionnaire and make it easier for teachers to understand and respond. A fifth option was included which was classified as 'U' for 'unable to comment'.

Section A and B

These sections incorporated the situation variables as outlined in the model and include 17 items relating to school, department and teacher characteristics. In Section B the eight items relate explicitly to the relationship of teachers with Student Outcome Statements. They relate to the length of time teachers have been using Student Outcome Statements, the extent of their use in various year levels. how the decision was made to begin using them, whether teachers were part of the official trial by the Education Department of Western Australia, the purposes for which Student Outcome Statements were being used and so on. Section A has nine items: school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex and age.

Section C and D

There are four aspects of the dependent variable that are measured in this section. Receptivity is measured in four aspects, Overall Feelings, Attitudes Behaviour Intentions and Behaviour. 'Overall Feelings' (Items 33-37) were measured under the heading 'Attitudes towards Student Outcome Statements' (because the piloting indicated responses would be better), using five items with a four point scale ranging from 'strongly agree' to 'strongly disagree' and a fifth option 'unable to comment'. 'Attitudes towards Student Outcome Statements' (Item 65) was measured using thirteen Semantic Differentials with a four point scale.

'Behaviour Intentions' (Items 46 to 51) were measured using six items and 'Behaviours' were measured using six items (Items 59 to 64).

There are four group one independent variables as outlined in the model (Chapter 3), non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system. They are all measured using the four-point scale described above. 'Non-monetary cost benefits' are measured using five items (Items 28 to 32, 'Alleviation of fears and concerns' with seven items, 'significant other support' using eight items (Items 38 to 45) and 'feelings compared to the previous system' were measured using ten items (Items 18 to 27).

Each variable, 'Overall Feelings', 'Behaviour Intentions', 'non-monetary cost benefits', 'alleviation of fears and concerns', 'significant other support' and 'feelings compared to the previous system' has a number of items used to determine the relevant measure, including some items for which responses need to be reversed. In addition, a set of thirteen semantic differentials is used to describe Attitudes of teachers towards Student Outcome Statements.

Section E

There are six group two independent variables as outlined in the model (Chapter three) which measure the work organisations of teachers, shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities. Each variable has a number of items used to determine the measure, including reversals. They are all measured utilising the four-point scale described above. 'Shared teaching goals' (Items 87 to 95) and 'cohesiveness' (Items 96 to 107) are indicators of overall shared goals. These twenty-one items are measured in two distinct categories: goals as demonstrated in the department and goals as demonstrated in the whole school. 'Team teaching' (Items 109 to 115), 'involvement in decision-making' (Items 77 to 86) and 'teacher collaboration' (Items 66 to 76) are indicators of overall collaboration. Teacher learning opportunities (Items 116 to 129) are measured using thirteen items.

Open ended comments

Respondents were invited to comment on any aspect of the research and provided with almost a full page to respond.

Introduction to Measurement

The dependent variable, receptivity, is measured in four aspects, Overall Feelings, Attitudes, Behaviour Intentions and Behaviour towards Student Outcome Statements. These aspects are classified as latent attributes (except for Behaviour) and the literature describes a number of different types of scales that have been developed to measure these attributes. The most common scales use statements which principally refer to attitude and restrict the respondents' answers to agree or disagree, such as Likert Scales and Semantic Differential Scales (Waugh & Godfrey, 1995,1993; Waugh & Punch, 1985; and Osgood, Suci & Tannebaum, 1970). More recent developments in the measurement of latent variables suggest the use of the Rasch Measurement Model (Waugh & Collins, 1997; Waugh, 1994; Waugh & Godfrey, 1993; Waugh & Punch, 1987, 1985; Andrich, 1988a; Wright & Masters, 1981; Rasch, 1960/1980;) with Likert, Semantic Differential and other similar scales.

Before testing the hypotheses, it was necessary to investigate the psychometric properties and the conceptual design of the variables. In regard to the latter, the items are based on a conceptual framework based on previous research by Waugh and Godfrey (1995, 1993); Rosenholtz (1991) and Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991) and Waugh and Punch (1987,1985). In regard to the former, item analysis was undertaken to ensure that the aggregation of items into the proposed scales satisfied the necessary criteria to form valid and reliable scales. These criteria are as set out by Wright and Masters (1981) and described in Waugh (1998, p.47). They involve the following processes:

- an evaluation of whether each item functions as intended;
- an estimation of the relative position (difficulty) of each valid item along the scale;

- an evaluation of whether each teacher's responses form a valid response pattern;
- an estimation of each teacher's relative score (perception) on the scale;
- calibrating the teacher scores and the item scores together on a common scale defined by the items, with a constant interval from one end of the scale to the other so that their numerical values mark off the scale in a linear way;
- calculating the numerical values with standard errors which indicate the precision of the measurements on the scale; and
- checking that the items remain similar in their function and meaning from teacher to teacher and group to group so that they are seen as stable and useful measures.

The item analysis was undertaken using a Rasch model with the Quest program (Adams & Khoo, 1994). The model is the Extended Logistic Model of Rasch for ordered response items such as Likert scales and Semantic Differentials (Andrich, 1988a; Rasch 1960/1980). The model creates a scale at interval measurement level based on the log odds of respondents agreeing with the items. The program checks on the consistency of the teachers' responses and calculates the scale score needed for a fifty percent chance of passing from one response category to the next (for example, from strongly disagree to disagree, from disagree to agree and from agree to strongly agree for each item). The scale scores are called threshold values. They are calculated in logits and they must be ordered to represent the increasing receptivity needed to answer from each response category to the next one. Items whose thresholds are not ordered (that is, for which the teachers do not use the categories consistently) are not considered to fit the measurement model and are discarded.

The scale produced by the Rasch process has items ordered from easiest with which to agree to hardest with which to agree. Items at the easiest end of the scale (those with negative logit values) are answered in agreement by most teachers and items at the hardest end (those with positive logit values) are most likely to be answered in agreement only by teachers whose receptivity is strongly positive.

Equal differences between numbers on the created scale represent equal differences in teacher receptivity measures and item difficulties, as appropriate, with both item difficulties and teacher receptivity calibrated on the same scale. The model produces scale-free teacher receptivity measures and sample-free item difficulties so that differences between pairs of teacher perception measures and item difficulties are expected to be sample independent (Andrich, 1988b, Wright and Masters, 1981).

The program checks that the teachers' responses fit the measurement model. The fit statistics are weighted and unweighted mean squares that can be approximately normalised using the Wilson-Hilferty transformation. The normalised statistics are called infit t and outfit t and when the data conform to the model they have a mean near zero and a standard deviation near one. Also, it is generally accepted that each item should fit the model within a 30 percent variation between the observed and the expected response pattern (otherwise teacher responses are not related to the responses to the other items in such a way as to form a valid scale).

The Item Separation Index and the Teacher Separation Index calculate reliability. Separation indices represent the proportion of observed variance considered to be true. A combination of data is required as evidence for the construct validity of the scale. The Item and Teacher Separation Indices must be high. The observed and expected item response patterns need to fit the measurement model according to strict criteria; the thresholds related to passing from one category response to the next need to be ordered; and there needs to be a conceptual framework (theoretical or practical) linking the items of the scale together.

Before undertaking the analysis, a number of items were reverse scored. The results of the Rasch evaluation then led to some adjustments to the scales with several items being discarded. The results for the various scales are summarised below and will be discussed in the following sections of this chapter.

Definition and Measurement of the Dependent Variables

The Rasch reliability and validity measures for the various scales that constitute the dependent variables are summarised in Table 4.1 and will be discussed below.

Table 4.1: Teacher statistics for the scales of the dependent variables

	Overall Feelings	Attitudes	Behaviour Intentions	Behaviour
Mean	1.08	0.95	1.43	0.82
Std Deviation (Adj)	0.74	1.07	1.18	0.90
Separability	0.41	0.34	0.66	0.67
Infit Mean square	0.97	0.99	0.99	1.00
Outfit Mean square	1.02	0.99	1.00	1.31
Infit t mean	-0.15	-0.01	-0.03	-0.05
Std Deviation	1.70	1.21	1.50	1.08
Outfit t mean	-0.09	0.08	0.00	0.29
Std Deviation	1.37	1.15	1.15	0.84
No of Items	5	9	6	6
No of Teachers	85	114	106	124
Non-Fit Items	None	4	None	None

Notes:

1. When the data are compatible with the model, the expected values of the mean squares are approximately 1 and the expected values of the t-scores are approximately zero.
2. Mean and Standard Deviation are the mean and standard deviation of the teacher scores.
3. Separation indices represent the proportion of observed variance considered to be true. A value of 1 represents high separability and a value of 0 represents low separability. A separability value of 0.9 or more is sought for a good scale.
4. Infit mean refers to mean squares, unweighted, and should be close to 1.
5. Outfit mean refers to weighted mean squares, and should be close to 1.
6. Infit t and outfit t refer to the normalised values using Wilson-Hilferty transformations, and should be close to 0.

Overall Feelings

The first aspect of the dependent variable, Overall Feelings measures teachers' opinions about Student Outcome Statements, without any strong direction towards implementation or direct action. Overall Feelings are defined on a continuum from 'oppose' to 'dislike' to 'support', bounded by a temporal range from the recent past to near future. The scale for Overall Feelings is shown in Figure 4.1 with the item difficulties and Overall Feelings calibrated on the same scale. Overall Feelings (Items 33 to 37) indicate support or opposition to the use of Student Outcome Statements, in the past or in the future, and like or dislike for using them now or in the next few years. Items 33, 35 and 36 were reversed scored.

Figure 4.1: Receptivity scale (measured in logits) for dependent variable, Overall Feelings

Positive Overall Feelings		Difficult items
+4.0 Logits		
	xxx	
+3.0 Logits		
	xxxxxxxx	
		Item 34(UT), 37(UT)
		Item 35 (UT)
+2.0 Logits		Item 36(UT)
	xxxx	
		Item 33(UT)
	x	
	x	
	xxxxxx	
+1.0 Logits		
	x	
	xxxxxxxxxxxxxxx	
	xx	
0.0 Logits		
	xx	
	x	
	x	Item 35 (MT)
	x	
	x	
-1.0 Logits		Item 36 (MT)
		Items 34 (LT), 34 (MT)
		Item 37 (MT)
	x	Item 35 (LT)
		Item 37 (LT)
-2.0 Logits		Item 33 (MT)
		Item 36 (LT)
Negative Overall Feelings		**Easy items**

Notes:

1. Each x represents two teachers.
2. The item difficulties and the teacher Overall Feelings are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 85 teachers (40 cases with perfect scores and 1 case with a zero score were discarded).
4. L = 5 items and none were discarded.
5. Teacher Overall Feelings scores range from -1.1 to +3.5 logits and the item difficulties range from -2.1 to +2.3. All items fit the model within 30% of the expected and observed responses.

6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong positive Overall Feelings towards Student Outcome Statements can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

The summary of teacher scores for Overall Feelings indicates that separability (the proportion of observed variance estimated to be true) is low (0.41). The scale for Overall Feelings needs more items, especially of intermediate difficulty, to improve the spread of scores and lower the errors (see Figure 4.1). The fit statistics show a reasonably good fit, with infit t and outfit t approximately 0, although the standard deviation for infit t (1.70) should be closer to 1 (see Table 4.1). The scale created has a fairly well calibrated distribution of teacher scores and item difficulty. However, the distribution of items would be improved with more items of moderate difficulty in the centre of the range. All items fit the model within 30 percent of the expected and observed responses. Thresholds in the main are ordered from low to high indicating that items are answered consistently, although one item has its lower threshold equivalent to its middle threshold (item 34). The final scale consists of five items (listed in Table 4.2) and they provide an acceptable scale for this study.

Table 4.2: Items used to obtain a measure for Overall Feelings

Item	Statement
33	I have opposed the use of SOS
34	I will probably support the use of SOS in the next few years
35	I dislike using SOS
36	I will probably dislike the use of SOS in the next few years
37	I will support the use of SOS

SOS= Student Outcome Statements

Attitudes

Attitude has an evaluative dimension. It is defined as a general evaluative feeling of favourableness or unfavourableness towards Student Outcome Statements and a general evaluation of the extent to which Student Outcome Statements serve a worthwhile purpose. Attitudes towards Student Outcome Statements are measured with nine bipolar adjective pairs (see Table 4.3). These include

satisfactory - unsatisfactory, wise - unwise, realistic - unrealistic, necessary - unnecessary, complicated - uncomplicated and time efficient - time inefficient. The final scale for Attitudes is shown in Figure 4.2 with item difficulties and Attitudes calibrated on the same scale.

Figure 4.2: Receptivity scale (measured in logits) for dependent variable, Attitudes

Positive Attitudes towards SOS		Easy items
+6.0 Logits		
		Item 65j (UT)
	xxx	
+5.0 Logits		
	xx	
+4.0 Logits		Item 65l (UT)
	xxxxxxxx	
+3.0 Logits		
	xxx	
	xxxx	Item 65g (UT)
+2.0 Logits	xxxxxx	Items 65c (UT),65i (UT), 65j (MT)
	xxxxxxxxxxxx	Items 65e (UT), 65m (UT)
	xxxxxxxx	Items 65a (UT), 65f (UT), 65l (MT)
+1.0 Logits	xxxxxxxxxxxxx	
	xxxxxxxxxxx	
	xxxxxxx	
	xxxxxxxxx	Item 65g (MT)
0.0 Logits	xxxxxxxxx	
	xxx	Items 65i (MT), 65j (LT)
	xx	Item 65l (LT)
-1.0 Logits	xxx	Item 65m (MT)
	xxx	Item 65c (MT)
	xxx	Items 65a (MT), 65e (MT), 65g (LT)
-2.0 Logits	x	Item 65f (MT)
		Items 65c (LT), 65i (LT)
-3.0 Logits		Item 65m (LT)
	x	Item 65f (LT)
		Item 65a (LT)
-4.0 Logits		
Negative Attitudes towards SOS		**Easy items**

Notes:

1. Each x represents one teacher.
2. The item difficulties and the teacher attitudes are calibrated on the same scale. The scale is measured in logits which is the log odds of teachers agreeing with the items.
3. $N = 114$ teachers (9 cases with perfect scores and 3 cases with zero scores were discarded).
4. $L = 9$ items. Four of the original thirteen items (65b, 65d, 65h and 65k) were discarded because of bad fit.
5. Teacher attitude scores range from -3.1 to +5.2 logits and the item difficulties range from -3.2 to +5.3. Nine items fit the model within 30% expected and observed responses.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong positive attitudes towards Student Outcome Statements can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.

7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

The fit statistics for Attitudes show a good fit of the teacher responses to the measurement model. Infit t and outfit t values are close to 0 and their standard deviations close to 1 (see Table 4.1). The scale (see Figure 4.2) shows a similar range and distribution of teacher scores and item difficulty. This shows that the item difficulties are well targeted against teacher attitudes. All items fit the model within 30 percent of the expected and observed values. All thresholds, which are used to check on the consistency of the teachers' responses, are ordered from low to high, indicating that the teachers have answered the response categories consistently. Four items were deleted because of very bad fit to the model. The deleted items were 65b valuable – worthless; 65d good – bad; 65h effective – ineffective; and 65k clear - unclear. The final scale for Attitudes consists of nine items (see Table 4.3 and Figure 4.2) and provides an acceptable scale for this study.

Table 4.3: Adjective pairs for each item used in the semantic differential, Attitudes

Item	Adjective Pair	
65a	Satisfactory	Unsatisfactory
65c	Wise	Unwise
65e	Intelligent	Absurd
65f	Permissive	Restrictive
65g	Realistic	Idealistic
65i	Necessary	Unnecessary
65j	Uncomplicated	Complicated
65l	Time efficient	Time inefficient
65m	Liberating	Constraining

The separability of the attitude scale is low (0.34) suggesting a need for improvement. The scale needs to be reviewed to obtain a better fit to the model, as it may not have been measuring precisely what it set out to do. The pattern of responses was very positive when describing the generic value of the Student Outcome Statements, but was very negative when it came to deciding on the practicality of them. For example, 86.5 percent of the respondents strongly agreed or agreed that they were valuable, yet 63.5 percent felt that they were complicated, 54.7 percent felt they were time inefficient and 53.2 percent felt they were unclear. Two of these items, as described above, were discarded, yet the raw data suggests that the responses to both of these items have significant qualitative value.

Behaviour Intentions

The variable, Behaviour Intentions is defined as a direct intention or direct orientation to action with respect to a continuum from actively opposing the use of Student Outcome Statements, avoiding the discussion of issues relating to Student Outcome Statements, and saying that Student Outcome Statements are useful for various purposes such as monitoring student achievement, reporting student achievement and planning teaching and learning programmes. The scale for Behaviour Intentions is shown in Figure 4.3 with Behaviour Intentions and the item difficulties calibrated on the same scale.

The low reliability of the estimate (0.66) indicates the scale needs some improvement, for example, by increasing the number of items. The created scale has a few too many items at the easy end and not enough at the difficult end. All items have a good fit to the measurement model (within 15 percent of the expected and observed values) except one within 40 percent (Item 47). Infit t (-0.03) and outfit t (0.00) demonstrate a good fit of the teachers' responses to the model. All thresholds are ordered from low to high indicating consistency in teachers' responses to the items. The final set of six items (listed in Table 4.4) formed an acceptable scale for this study. The scale measure is depicted in Figure 4.3.

Figure 4.3: Receptivity scale (measured in logits) for dependent variable, Behaviour Intentions

Positive Behaviour Intentions towards SOS		Difficult items
+5.0 Logits		
	xxxxx	
	x	
+4.0 Logits		
	x	Item 48 (UT)
	xxxxxx	
	x	
+3.0 Logits		Items 47 (UT), 49 (UT)
	x	
	xxxxxxxxxxxxxxxxxxx	Item 50 (UT)
	x	
		Item 51 (UT)
+2.0 Logits	xxxxxxxxxxxxxx	
	x	
	xxxxxxxxxxxxx	
+1.0 Logits		Item 46 (UT)
	xxxxxxxxxxxxxxxxx	
	xxx	
0.0 Logits	x	
	xxxxxxxxx	Item 48 (MT)
	xxx	
	x	
-1.0 Logits		
	xx	Item 51 (MT)
	x	Item 50 (MT)
	xxx	
	x	Items 46 (MT), 48 (LT), 49 (MT)
		Item 50 (LT)
-2.0 Logits		
		Item 51 (LT)
		Item 47 (MT)
		Item 46 (LT)
Negative Behaviour Intentions towards SOS		**Easy items**

Notes:
1. Each x represents one teacher.
2. The item difficulties and the teacher Behaviour Intentions are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 106 teachers (19 cases with perfect scores and 1 case with a zero score were discarded).
4. L = 6 items and none were discarded.
5. Teacher Behaviour Intentions scores range from -1.2 to +4.2 logits and the item difficulties range from -2.1 to +3.3. All but item 47 fit the model within 15% expected and observed responses. Item 47 fits within 40%.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong positive Behaviour Intentions towards Student Outcome Statements can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

Table 4.4: Items used to obtain a measure for Behaviour Intentions

Item	In my behaviour and communication with others I will probably:
46	Actively oppose the use of SOS
47	Say that SOS are useful for monitoring student achievement
48	Say that SOS are useful for reporting student achievement to parents
49	Say that SOS are useful for planning teaching/learning programs
50	Say that SOS are not useful for school development planning
51	Avoid discussing issues about the use of SOS

SOS= Student Outcome Statements

Behaviour

Behaviour is defined as attendance at, and participation in, meetings where Student Outcome Statements issues are discussed and oral and written comments given towards Student Outcome Statements. The final set of Behaviour items is given in Table 4.5.

Table 4.5: Items used to obtain a measure for Behaviour

Item	Statement
59	I have spoken in support of the use of SOS in forums such as staff or departmental meetings
61	I have attended meetings and professional development to improve my knowledge about the use of SOS
62	I have refused to participate in forums which address the use of SOS
63	I have shared my knowledge about the use of SOS with other teachers
64	I have provided written feedback to Central Office or District Office personnel on aspects of SOS

SOS= Student Outcome Statements

The scale for Behaviour is set out in Figure 4.4 with the item difficulties calibrated on the same scale with the Behaviour measure. The proportion of observed variance estimated to be true is 0.67. This is lower than desired indicating that the errors are large in comparison to the separation of the measures. The fit statistics show a reasonably good fit; however, the negative value for the infit t indicates a response pattern that fits the model too closely and the outfit t of +0.29 indicates some 'noise' is present; that is, some items are measuring other aspects. The

created scale has similar ranges for teacher scores and item difficulties although there are not quite enough items at the difficult end of the scale.

Figure 4.4: Receptivity scale (measured in logits) for dependent variable, Behaviour

Positive Behaviour towards SOS		Difficult items
+4.0 Logits		
	x x x x x	
+3.0 Logits		
		Item 60 (UT)
	x x x x x x x x x x	
		Item 64 (UT)
+2.0 Logits		
	x x x x x x x x x x x	
		Item 59 (UT)
	x x x x x x x x x x x x	
	x x x x x x x x x x	Items 60 (MT), 64 (MT)
		Item 61 (UT)
+1.0 Logits	x x x x x x x x x x x x x x x x x x	
		Item 64 (LT)
	x	
	x x x x x x x x x x x x	Item 63 (UT)
	x x x x x x x x x x x x x x x	
		Item 60 (LT)
0.0 Logits	x x x x x x	Item 59 (MT)
	x	
	x x x x x	
		Item 61 (MT)
	x x x x x x x x	
		Item 59 (LT)
-1.0 Logits	x x	
	x	
	x	Items 61 (LT), 63 (MT)
	x x x x	
		Item 62 (UT)
		Item 63 (LT)
-2.0 Logits		
	x	
Negative Behaviour towards SOS		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the teacher Behaviour are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 124 teachers (2 cases with perfect scores were discarded).
4. L = 6 items and none were discarded.
5. Teacher Behaviour scores range from -2.3 to +3.3 logits and the item difficulties range from -1.9 to +2.8. Five of the six items fit the model within 40% of the expected and observed responses. Item 60 is a poor fit to the model.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong positive teacher Behaviour towards Student Outcome Statements can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. Each item has three thresholds: UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree).

The scale has item estimates at reasonably uniform intervals except for item 60, at the difficult end of the scale, which is a poorer fit in terms of the step from Agree to Strongly Agree. The item fit scale shows that all other items fit the model within 40 percent of the expected and observed responses. All thresholds are ordered appropriately from low to high indicating consistency in teachers' responses to the items. These results indicate that a reasonable scale has been constructed. However, some improvements could be made by trialing extra items. The final scale consists of five items (see Table 4.5). The scale measure is depicted in Figure 4.4

Definition and Measurement of the Group One Independent Variables

The Rasch reliability and validity measures for the various scales that constitute the group one independent variables are summarised in Table 4.6 and will be discussed in the following section.

Table 4.6: Teacher statistics for the scales of the independent variables (Group One)

	Non-monetary cost benefits	Alleviation of fears and concerns	Significant other support	Feelings compared to the previous system
Mean	1.18	0.63	1.24	2.08
Std Deviation (Adj)	2.31	1.68	1.51	1.91
Separability	0.69	0.82	0.70	0.87
Infit Mean square	0.92	0.92	0.91	0.97
Outfit Mean square	1.07	0.90	0.95	0.97
Infit t mean	-0.17	-0.19	-0.02	-0.12
Std Deviation	1.07	1.35	0.93	1.41
Outfit t mean	0.16	-0.10	0.06	-0.05
Std Deviation	0.83	1.06	0.83	1.15
No of Items	5	7	8	10
No of Teachers	107	122	103	112
Non-Fit Items	None	None	None	None

Notes:

1. When the data are compatible with the model, the expected values of the mean squares are approximately 1 and the expected values of the t-scores are approximately zero.
2. Mean and Standard Deviation are the mean and standard deviation of the teacher scores.
3. Separation indices represent the proportion of observed variance considered to be true. A value of 1 represents high separability and a value of 0 represents low separability. A separability value of 0.9 or more is sought for a good scale.
4. Infit mean refers to mean squares, unweighted, and should be close to 1.
5. Outfit mean refers to weighted mean squares, and should be close to 1.
6. Infit t and outfit t refer to the normalised values using Wilson-Hilferty transformations, and should be close to 0.

Non-monetary cost benefits of Student Outcome Statements

The final set of the non-monetary cost benefits items is given in Table 4.7.

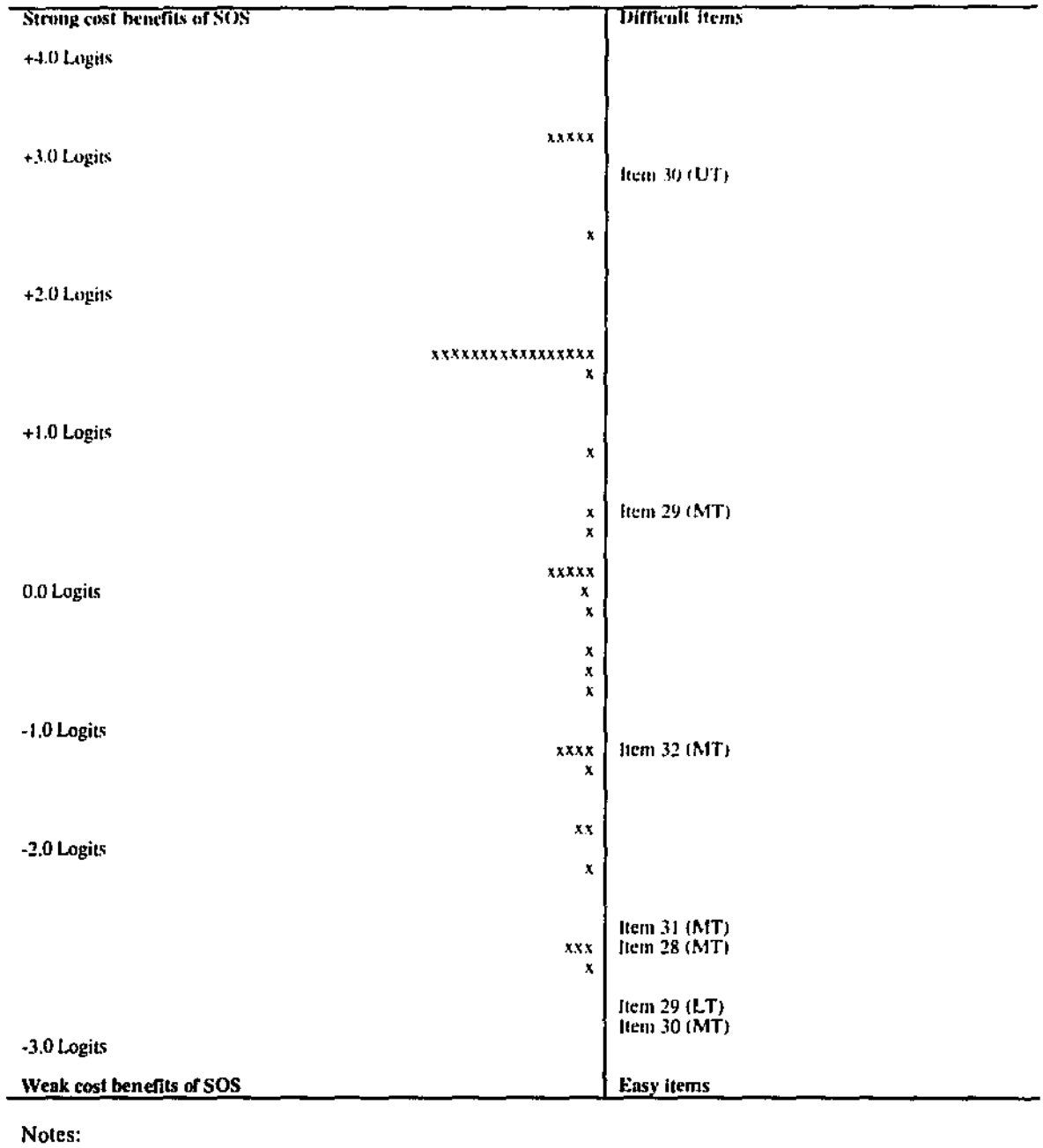
Table 4.7: Items used to obtain a measure for non-monetary cost benefits of Student Outcome Statements

Item	Statement
28	In weighing up the balance between any extra work generated for you by SOS and your satisfaction with teaching, the use of SOS is worthwhile.
29	In weighing up the balance between any extra work generated for you by SOS and your home life, the use of SOS is worthwhile.
30	In weighing up the balance between any extra work generated for you by SOS and better classroom learning, the use of SOS is worthwhile.
31	In weighing up the balance between the problems for you and the total benefits for the student, the use of SOS is worthwhile.
32	In weighing up the balance between any extra responsibility for student assessment and your workload, the use of SOS is worthwhile.

SOS= Student Outcome Statements

Non-monetary cost benefits of Student Outcome Statements are defined as the extent to which the Student Outcome Statements are considered to be worthwhile in weighing up the balance between extra work generated by Student Outcome Statements and satisfaction with teaching, home life, better student classroom learning; the total problems and the total benefits for the students and any extra responsibility for student assessment and work load.

Figure 4.5: Receptivity scale (measured in logits) for independent variable, non-monetary cost benefits of Student Outcome Statements



Notes:

1. Each x represents two teachers.
2. The item difficulties and the non-monetary cost benefits for the teacher are calibrated on the same scale. The scale is measured in logits which is the log odds of teachers agreeing with the items.
3. N = 107 teachers (16 cases with perfect scores and 3 cases with zero scores were discarded).
4. L = 5 items and none were discarded.
5. The non-monetary cost benefits scores for the teacher range from -2.7 to +3.1 logits and the item difficulties range from -2.9 to +2.9. All items fit the model within 40% of the expected and observed responses.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers who believe that there are strong positive non-monetary cost benefits of Student Outcome Statements can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

The scale for non-monetary cost benefits of Student Outcome Statements is shown in Figure 4.5 with the item difficulties and the non-monetary cost benefits of Student Outcome Statements calibrated on the same scale. The proportion of observed variance estimated to be true is 0.69. This is lower than desired indicating that the errors are large in comparison to the separation of the measures. The created scale for non-monetary cost benefits could be improved by including more difficult items and by increasing the number of items. There was a reasonably good fit of teacher responses to the model indicated by infit t (-0.17) and outfit t (0.16); however, the negative value for the infit t indicates a response pattern that fits the model too closely (see Table 4.6). This suggests that some item responses are dependent. All items fit the measurement model within 40 percent of the expected and observed responses. The low to high ordering of the thresholds evident in Figure 4.5 indicates consistency in teachers' responses to the items. The final scale for non-monetary cost benefits of Student Outcome Statements is considered to be reasonable and consists of five items that are shown in Table 4.7. The scale measure is depicted in Figure 4.5.

Alleviation of fears and concerns

Alleviation of fears and concerns is defined as opportunities by teachers to raise issues and concerns at meetings, to obtain advice from senior personnel, to be supported at the school and to have discussions with colleagues whenever there are problems with Student Outcome Statements. The final set of items for alleviation of fears and concerns is given in Table 4.8. The scale for alleviation of fears and concerns is shown in Figure 4.6 with the item difficulties and the alleviation of fears and concerns calibrated on the same scale. The scale created for alleviation of fears and concerns has a fairly well calibrated distribution of teacher scores and item difficulty. Outfit t (-0.10) and infit t (-0.19) indicate a good fit of teachers' responses to the model (see Table 4.6) particularly since the infit (0.92) and outfit (0.90) mean squares are close to 1. Most of the items fit within 50 percent of the expected and observed responses but item 57 is a poorer fit and was discarded from the final scale. The created scale has similar ranges for teacher

scores and item difficulties although more items at the moderate range of the scale may improve the measure.

Figure 4.6: Receptivity scale (measured in logits) for independent variable, alleviation of fears and concerns

Strong alleviation of fears and concerns towards SOS		Difficult items
+4.0 Logits		
	xxx	
		Item 58 (UT)
	x	
	xx	
	x	
+3.0 Logits		Item 54 (UT)
	x	Items 52 (UT), 56 (UT)
		Items 53 (UT), 57 (UT)
	xxxx	
	x	
	x	
	x	
	xx	
	x	
+2.0 Logits		
	x	
	xxxx	Item 55 (UT)
	xxxxxxxxxx	
	xxxxx	
+1.0 Logits	xxxxxx	
	xx	
	x	
	xxxxx	
	x	
	xxxx	
		Item 52 (MT)
	xxx	
	xxxxxx	
	xxx	
0.0 Logits		Item 58 (MT)
	xxxxx	
	xxxxx	Item 54 (MT)
	x	Item 53 (MT)
	x	
	xxxx	Item 56 (MT), 57 (MT)
	x	
	xxxx	
-1.0 Logits		
	x	
	xxxxxx	
	xx	
		Item 53 (LT)
	x	Item 52 (LT)
	x	Item 54 (LT)
-2.0 Logits		Item 56 (LT)
	xxx	
		Item 55 (MT)
	xxx	
		Item 58 (LT)
	x	Item 57 (LT)
		Item 55 (LT)
-3.0 Logits		
Weak alleviation of fears and concerns towards SOS		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the alleviation of fears and concerns of the teachers are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 122 teachers (3 cases with perfect scores and 1 case with a zero score were discarded).
4. L = 7 items and none were discarded.
5. The alleviation of fears and concerns scores of the teachers range from -2.8 to +3.7 logits and the item difficulties range from -2.9 to +3.5. Six of the seven items fit the model within 50% of the expected and observed responses. Item 57 is considered to be a poor fit to the model.

6. The difficult items are at the top of the right-hand side of the scale. Only teachers who felt that there was strong alleviation of fears and concerns can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. Each item has three thresholds: UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree)

The construct validity of the scale for alleviation of fears and concerns, as measured by the separability index (0.82), was acceptable for this study. All thresholds are ordered from low to high indicating consistency in teachers' responses to the items. The final scale consists of six items shown in Table 4.8 and the scale measure is depicted in Figure 4.6.

Table 4.8: Items used to obtain a measure for alleviation of fears and concerns

Item	Statement
52	There are regular school meetings at which I can raise my concerns about SOS
53	Whenever there are SOS problems there is a senior person at this school to whom I can turn for advice
54	There is a good general school support whenever I have problems with the implementation of SOS in the classroom
55	There is at least one school person with whom I can talk about any problems associated with SOS
56	Any concerns I have about SOS can be solved informally in general conversation at school
58	I can access District Office support to obtain advice about SOS

SOS= Student Outcome Statements

Significant other support for Student Outcome Statements

Significant other support for Student Outcome Statements is defined as the extent to which teachers felt that significant people such as the principal, deputy principals, superintendents, heads of department and their colleagues supported Student Outcome Statements. The final set of significant other support for Student Outcome Statements items is given in Table 4.9. The scale for significant other support for Student Outcome Statements is presented in Figure 4.7 with the significant other support for the Student Outcome Statements and the item difficulties calibrated on the same scale.

The reliability of the scale for significant other support as indicated by the separability index, is 0.70. Separability needs to be closer to 1 and could be improved with the inclusion of more items in the moderate to difficult category. All thresholds are ordered from low to high indicating consistency in teachers' responses to the items. Outfit t (0.06) and infit t (-0.02) indicate a good fit to the

model, with their respective mean squares being close to 1 (see Table 4.6). On the created scale the teacher responses and item difficulties are fairly well calibrated. The item fit needs some improvement, with items 41 and 43 being close to the 60 percent level of variation between the observed and the expected response pattern, consequently these items are not included in the final scale which consists of six items (see Table 4.9). The scale measure is illustrated in Figure 4.7.

Figure 4.7: Receptivity scale (measured in logits) for independent variable, significant other support for Student Outcome Statements

High support from others for SOS		Difficult items
+4.0 Logits		Item 42 (UT)
		Item 41 (UT)
	xx	
	x	
	xx	
	xxxx	
		Item 39 (UT)
+3.0 Logits		
	x	
	xx	
	xxx	Item 44 (UT)
	x	
	x	
+2.0 Logits	xxxxx	
		Item 38 (UT)
	xx	
	x	
	x	
		Item 40 (UT)
	x	
	x	
	xxxxxx	
	xx	
	xx	
	xxxx	
		Items 43 (UT), 45 (UT)
		Item 42 (MT)
+1.0 Logits	x	
	xxx	
	xxx	
	x	
	x	
	xxxxxx	
	xxxxx	
	x	
	x	
	x	
0.0 Logits	xxxx	
	xx	
	x	
	x	
	x	
	x	
	xxxxxx	
	x	
-1.0 Logits	x	
	x	
	x	
		Item 44 (MT)
	x	Item 39 (MT)
	x	
	x	Item 40 (MT)
		Item 45 (MT)
		Item 44 (LT)
	x	Item 41 (MT)
-2.0 Logits		Item 45 (LT)
	x	
	x	Item 42 (LT)
		Item 40 (LT)
-3.0 Logits		
Low support from others for SOS		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the teacher support from others are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 103 teachers (23 cases with perfect scores were discarded).
4. L = 8 items and none were discarded.
5. Teacher significant other support scores range from -2.5 to +3.5 logits and the item difficulties range from -2.8 to +4.0. Five of the eight items fit the model within 40% of the expected and observed responses. Item 44 fits within 50% and items 43 and 44 within 60%.
6. The difficult items are at the top of the right-hand side of the scale. Only those teachers who feel they receive high support from others can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

Table 4.9: Items used to obtain a measure for significant other support for Student Outcome Statements

Item	Statement
38	The principal at this school supports SOS
39	Most teachers in this department support SOS
40	My closest colleague at this school does not support SOS
42	Most teachers in this school support SOS
44	A deputy principal at this school supports SOS
45	The HOD/TIC in my main teaching area school supports SOS

SOS= Student Outcome Statements HOD= Head of Department TIC= Teacher in Charge

Feelings compared to the previous system (Unit Curriculum)

Feelings compared to the previous system (Unit Curriculum) are defined by a series of comparisons, which are drawn between the use of Student Outcome Statements and the previous system. They are defined by teacher feelings as to whether Student Outcome Statements provide for better student learning, more relevant content and more varied experiences for the students; whether Student Outcome Statements allow for better classroom management, better judgements to be made about student learning achievements, better description of student learning, more relevant learning experiences for students to be planned, and whether Student Outcome Statements address the needs of individual students. The final set of items that constitute feelings compared to the previous system is given in Table 4.10.

The scale for feelings compared to the previous system is shown in Figure 4.8 with feelings compared to the previous system and the item difficulties calibrated on the same scale.

The separability (0.87) for the dependent variable, feelings compared to the previous system, indicates good reliability of the scale for this study. All thresholds are ordered from low to high indicating that there is good consistency in the responses to items in this scale. There was a good fit of the teachers' responses to the measurement model indicated by infit t (-0.12) and outfit t (-0.05) and the mean squares were both close to 1 (see Table 4.6). The created scale has a fairly good calibrated distribution of teacher scores and item difficulty. Eight of the ten items fit within 30 percent of the expected and observed responses. Items 22 and 23 were a poorer fit to the model and were not included in the final scale. The final scale consists of the items listed in Table 4.10. The scale measure for feelings compared to the previous system is shown in Figure 4.8.

Table 4.10: Items used to obtain a measure for feelings compared to the previous system

Item	In comparison to the Unit Curriculum, the use of Student Outcome Statements allows me to:
18	Provide for better student learning
19	Manage my classroom better
20	Provide more relevant content
21	Address the need of individual students better
24	Make better judgements about student learning achievement
25	Plan more relevant learning experiences for my students
26	Demonstrate my accountability
27	Report more effectively on student achievement

Figure 4.8: Receptivity scale (measured in logits) for dependent variable, feelings compared to the previous system (Unit Curriculum)

Strong positive feelings towards SOS compared to the previous system		Difficult items
+4.0 Logits		
	x	
	x	
	xxxx	
		Item 25 (UT)
		Item 22 (UT)
		Item 18 (UT)
	x	
	xxxxxx	Item 27 (UT)
+3.0 Logits		
		Item 24 (UT)
	x	
	xxxxxx	
		Items 20 (UT), 23 (UT)
		Item 21 (UT)
	xx	
	xxxxxxxx	
	x	
	xx	
	xx	
+2.0 Logits	xxx	
		Item 19 (MT)
	x	
	xxxxxxxxxxxxxxxxxx	
	x	
	x	
	xxxxx	
+1.0 Logits	x	
	xx	
		Item 26 (MT)
	x	
	xxxxx	
	x	
		Item 27 (MT)
0.0 Logits	xxx	
		Item 22 (MT)
	xx	
	x	
	x	
	xxx	
		Item 20 (MT)
	x	
		Item 24 (MT)
		Item 25 (MT)
-1.0 Logits		
	x	Item 23 (MT)
		Item 21 (MT)
		Item 18 (MT)
	x	
	x	
-2.0 Logits		
	xx	
Weak towards SOS compared to the previous system		Easy items

Notes:

1. Each x represents one teacher.
2. The item difficulties and the teacher feelings compared to the previous system are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 112 teachers (13 cases with perfect scores and 1 case with a zero score were discarded).
4. L = 10 items and none were discarded.
5. Teacher feelings compared to the previous system scores range from -2.3 to +3.9 logits and the item difficulties range from -2.4 to +3.5. Eight of the ten items fit the model within 30% of the expected and observed responses. Items 22 and 23 are a poor fit to the model.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong positive feelings towards the previous system can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.

7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

Definition and Measurement of the Group Two Independent Variables

The Rasch reliability and validity measures for the various scales that constitute the group two independent variables are summarised in Table 4.11 and will be discussed in the following section.

Table 4.11: Teacher statistics for the scales of the independent variables (Group Two)

	Shared teaching goals	Cohesiveness	Team teaching	Involvement in decision-making	Teacher collaboration	Teacher learning opportunities
Mean	1.58	1.12	1.04	1.41	1.40	1.20
Std Deviation	1.29	0.80	2.28	1.31	1.19	1.18
Separability	0.78	0.71	0.81	0.81	0.78	0.81
Infit Mean square	1.01	1.05	0.70	1.00	1.05	0.96
Outfit Mean square	0.97	1.02	1.26	0.99	1.12	0.96
Infit t mean	-0.14	-0.04	0.02	-0.04	-0.05	-0.23
Std Deviation	1.47	1.56	0.95	1.24	1.40	1.57
Outfit t mean	-0.08	-0.10	0.34	0.00	0.04	-0.18
Std Deviation	1.14	1.25	0.89	1.05	1.21	1.29
No of Items	9	12	7	10	11	14
No of Teachers	122	123	122	117	122	124
Non-Fit Items	None	None	None	None	None	None

Notes:

1. When the data are compatible with the model, the expected values of the mean squares are approximately 1 and the expected values of the t-scores are approximately zero.
2. Mean and Standard Deviation are the mean and standard deviation of the teacher scores.
3. Separation indices represent the proportion of observed variance considered to be true. A value of 1 represents high separability and a value of 0 represents low separability. A separability value of 0.9 or more is sought for a good scale.
4. Infit mean refers to mean squares, unweighted, and should be close to 1.
5. Outfit mean refers to weighted mean squares, and should be close to 1.
6. Infit t and outfit t refer to the normalised values using Wilson-Hilferty transformations, and should be close to 0.

Shared teaching goals

Shared teaching goals are defined by the extent to which teachers at the department and the school level agree on, and share outcomes students should be achieving, share a high level of commitment to student learning and have similar values and philosophy of education. The final set of items used to measure shared teaching goals is given in Table 4.12.

Table 4.12: Items used to obtain a measure for shared teaching goals

Item	Statement
In this department:	
87	The teaching staff agree on the outcomes our students should be achieving
88	Teachers do not share a high level of commitment to student learning
89	The values and philosophy of education of the HOD/TIC are similar to those held by the other teachers
90	There are explicit departmental guidelines about the things teachers are to emphasis in their teaching
In this school:	
92	Teachers share a high level of commitment to student learning
93	Most teachers have values and philosophies of education similar to my own
94	The teaching staff agree on the outcomes our students should be achieving
95	The values and philosophy of education of the principal are similar to my own

HOD= Head of Department TIC= Teacher in Charge

The scale for shared teaching goals is given in Figure 4.9 with shared teaching goals and the item difficulties calibrated on the same scale. A good fit of teacher responses to the measurement model is indicated by infit t (-0.14) and outfit t (-0.08) though the negative values for both suggest that some items in the scale for shared teaching goals may be interdependent and (see Table 4.11). Seven of the original nine items fit the model within 30 percent of the expected and observed responses. Item 89 fits the model within 40% to 50%. Item 90 has a poor fit to the model and was not included in the final scale for the shared teaching goals (see Table 4.12). The index of separability (0.78) for the shared teaching goals scale indicates an acceptable level of reliability, though a value closer to 1 would be desirable. The scale created has similar ranges for teacher scores and item difficulties; however, there could be fewer easy items and more in the moderate difficulty range. The consistency of teachers' correct use of item response categories is indicated by the thresholds, which are all ordered appropriately from low to high. These results indicate that a reasonable scale has been constructed. Eight items make up the final scale for shared teaching goals (see Table 4.12) and Figure 4.9 depicts the scale measure.

Figure 4.9: Receptivity scale (measured in logits) for independent variable, shared teaching goals

High shared teaching goals		Difficult items
+4.0 Logits	x	
	x	
	xxxxxxx	
		Item 90 (UT)
		Items 91 (UT), 93 (UT), 94 (UT)
	x	
	x	
	xxxxxxx	
+3.0 Logits	x	
		Item 87 (UT)
	x	Item 95 (UT)
	xx	
	x	Item 89 (UT)
	x	
	x	
	xxxxxxxx	
+2.0 Logits		
	xxx	
	xx	
	xxxxxxxxxx	
	xxx	
	xxxxx	
	xxxxxxxxxxxxxx	
	x	
	xx	
	x	Item 92 (UT)
	x	
+1.0 Logits		Item 90 (MT)
	xxxx	
	xxxx	
	xxx	
	x	Item 88 (UT)
	x	
	x	
	x	
	xxxxx	
	x	
	x	
	x	
0.0 Logits	xx	Items 93 (MT), 94 (MT)
	xx	
	x	Item 91 (MT)
	x	Item 89 (MT)
	x	
	xx	
	x	Item 95 (MT)
-1.0 Logits		Item 87 (MT)
	xx	
		Item 88 (MT)
		Item 92 (MT)
	x	Item 90 (LT)
		Item 89 (LT)
	x	
		Item 88 (LT)
-2.0 Logits		
	x	Item 87 (LT)
	x	Items 91 (LT), 93 (LT)
		Item 95 (LT)
		Item 94 (LT)
		Item 92 (LT)
-3.0 Logits		
Low shared teaching goals		Easy items

Notes:

1. Each x represents one teacher.
2. The item difficulties and the shared teaching goals are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 122 teachers (4 cases with perfect scores were discarded).
4. L = 9 items and none were discarded.
5. The shared teaching goals scores range from -2.2 to +4.0 logits and the item difficulties range from -2.9 to +3.5. Seven of the nine items fit the model within 30% and one within 40% to 50% of the expected and observed means. Item 90 is a poor fit to the model.

6. The difficult items are at the top of the right-hand side of the scale. Only teachers with high shared teaching goals can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. Each item has three thresholds: UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree).

Cohesiveness

Cohesiveness is defined by how closely teachers work together at the department and at the school level. This involves teachers knowing about what goes on in each others' classrooms, acceptance of what they do by others, taking responsibility for what goes on in the school and/or the department and regular communication between colleagues. The final set of items used to measure cohesiveness is shown in Table 4.13.

Table 4.13: Items used to obtain a measure for support for cohesiveness

Item	Statement
In this department:	
96	Most of the teachers know what I do in my classroom
97	I tend to do things that are likely to be accepted by only a few teachers in my department
98	I feel that what goes on in this department is my responsibility
100	I tend to do things that most teacher in my department don't understand
101	I work for days without talking to colleagues about my teaching
In this school:	
102	Most of the other teachers don't know what I do in my classroom
103	Most of the other teachers know what my teaching goals are
104	I tend to do things that are likely to be accepted by only a few teachers in my school
105	I tend to do things that most of the teachers in my school don't understand
106	I feel that what goes on in this school is my responsibility
107	I work for days without talking to colleagues about my teaching

The scale for cohesiveness is presented in Figure 4.10 with cohesiveness and the item difficulties calibrated on the same scale. In the cohesiveness scale, the proportion of observed variance estimated to be true is 0.71. This is lower than desired indicating that the errors are large in comparison to the separation of the measures.

Figure 4.10: Receptivity scale (measured in logits) for independent variable, cohesiveness

High cohesiveness		Difficult items
+4.0 Logits		
	x	
		Item 103 (UT)
+3.0 Logits	xx	Item 98 (UT)
	x	
	x	Item 106 (UT)
		Item 102 (UT)
	x	
	x	
	xxxxxx	
		Item 99 (UT)
	xxxxxx	
		Item 96 (UT)
		Item 105 (UT)
+2.0 Logits	x	
	xxxxxxxx	Items 98 (MT), 104 (UT)
		Items 97 (UT), 100 (UT)
	xxxx	
	x	
	xxxxxxxx	
	xx	
	xxxxxxxxxxxx	
	xxx	
		Items 102 (MT), 107 (UT)
	xxxxxxxxx	
+1.0 Logits	xxxx	Item 103 (MT)
	xxxxxxxx	
	xxxx	
	x	
	xxxxxxxxxx	
	xxxxxxx	Item 106 (MT)
	x	
	xx	Item 101 (UT)
	xxx	Item 98 (LT)
	xxx	
0.0 Logits		
	xxxxx	
		Item 99 (MT)
	xx	
		Items 96 (MT), 107 (MT)
	x	Item 105 (MT)
	x	
	x	Item 101 (MT)
-1.0 Logits		
		Item 103 (LT)
		Items 101 (LT), 102 (LT), 106 (LT)
		Item 104 (MT)
		Items 97 (MT), 100 (MT)
	x	
-2.0 Logits		Item 99 (LT)
		Item 107 (LT)
		Item 96 (LT)
		Items 97 (LT), 100 (LT), 104 (LT)
-3.0 Logits		
Low cohesiveness		Easy items

Notes:

1. Each x represents one teacher.
2. The item difficulties and the cohesiveness are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 123 teachers (3 cases with perfect scores were discarded).
4. L = 12 items and none were discarded.
5. Teacher cohesiveness scores range from -1.5 to +3.6 logits and the item difficulties range from -2.8 to +3.3. Except for item 98 the other eleven items fit the model within 40% of the expected and observed responses. Item 98 is a poor fit to the model and required review.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with high cohesiveness can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.

7. Each item has three thresholds: UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree).

The ranges for teacher scores and item difficulties in the created scale need to be closer. In order to improve the range of scores and lower the errors more difficult items need to be included and the number of easy items reduced. Infit t and outfit t values indicate that the fit of teachers' responses to the model is good (see Table 4.11), although the standard deviation for infit t (1.56) should be closer to 1. Both t values are negative which suggests that responses to some items are interdependent. All items fit within 40 percent of the expected and observed responses except for item 98, which has a poorer fit. The low to high ordering of the thresholds evident in Figure 4.10 represent the increasing receptivity needed to answer from each response category to the next one. The final scale consists of eleven items (see Table 4.13) and the scale measure is illustrated in Figure 4.10.

Team teaching

Team teaching is defined by levels of enjoyment of the sharing of team teaching responsibilities, the value placed on team teaching, the perception that team teaching is best for students and a positive attitude to sharing team teaching responsibilities. The final set of items used to measure team teaching is shown in Table 4.14.

Table 4.14: Items used to obtain a measure for team teaching

Item	Statement
109	I enjoy team teaching responsibilities
110	I value team teaching
111	There should be more team teaching
113	Team teaching is best for students
114	Students prefer team teaching
115	I like to share team teaching responsibilities with other teachers

Figure 4.11: Receptivity scale (measured in logits) for independent variable, team teaching

High level of team teaching		Difficult items
+4.0 Logits		
		Item 109 (LT)
+3.0 Logits		
		Item 113 (UT)
	x	
		Item 113 (MT)
	xx	
		Item 115 (UT)
+2.0 Logits		
	xxxx	
	x	
		Item 114 (UT)
	x	
	xxxxxx	
+1.0 Logits	x	
	x	
	x	
	xx	
	xxxxxxxxxxxxxx	
		Item 110 (UT)
		Item 111 (UT)
0.0 Logits	xxxxxxxxx	
	xxx	
		Item 112 (UT)
		Item 113 (LT)
	x	
	x	
	xxxxxxxxx	
	xxx	
	xxxxxxx	
	xxxxxxx	
-1.0 Logits		
	xxxxx	
	x	Item 115 (MT)
	xxxxx	
		Item 114 (MT)
-2.0 Logits	xx	
		Item 112 (MT)
		Item 115 (LT)
	x	
		Items 111 (LT), 111 (MT)
-3.0 Logits		
Low level of team teaching		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the level of team teaching are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.

3. N = 122 teachers (2 cases with perfect scores and 2 cases with zero score were discarded).
4. L = 7 items.
5. Team teaching scores range from -2.8 to +2.5 logits and the item difficulties range from -2.9 to +3.2. None of the items are a good fit to the model and this set of items requires review. Item 113 is a very poor fit.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong positive feelings towards team teaching can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. Each item has three thresholds: UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree).

The scale for team teaching is shown is Figure 4.11 with team teaching and the item difficulties calibrated on the same scale. The reliability for the team teaching scale, as measured by a separability value of 0.81, was good. All thresholds are ordered from low to high indicating consistency in teachers' responses to the items. Infit t (0.02) and outfit t (0.34), along with an infit mean square of 0.70 and an outfit mean square of 1.26, indicate a poor fit of teachers' responses to the measurement model (see Table 4.1). The infit means should be closer to 0 and those for the mean squares should be closer to 1. The item fit scale does not show a good fit to the model. None of the items are a good fit to the model and one item (113) a very poor fit. The final set of six items (listed in Table 4.14) formed the scale for this study; however, the team teaching scale needs a major overhaul. It may be improved by reducing the number of difficult items and by constructing and trialing a range of new items. Figure 4.11 illustrates the scale measure.

Involvement in decision-making

Involvement in decision-making at the department and the school level is defined by teacher, head of department, principal or deputy principal's participation in the modification of the curriculum to meet student's needs, the selection of instructional materials and resources, determining appropriate instructional methods and in the selection of content and type of professional development. The final set of items used to measure involvement in decision-making is shown in Table 4.15.

Table 4.15: Items used to obtain a measure for support for involvement in decision-making

Item	Statement
In this department:	
77	Teachers participate in selecting instructional materials/resources
78	Teachers participate in determining the content of the PD sessions we have
79	Teachers do not participate in determining appropriate instructional methods
80	The HOD/TIC participates in instructional related decision-making with the teachers
81	Teachers are encouraged by the HOD/TIC to modify the curriculum to meet students' needs
82	I am involved in decisions which are related to the use of SOS
In this school:	
83	Teachers are encouraged by the principal to modify the curriculum to meet students' needs
84	Teachers participate in determining the type of whole school PD we have
85	I am involved in decisions outside of my department which are related to the use of SOS
86	Teachers are encouraged by a deputy principal to modify the curriculum to meet students' needs

SOS= Student Outcome Statements HOD= Head of Department TIC= Teacher in Charge
PD= Professional Development

The scale for involvement in decision-making is set out in Figure 4.12 with the item difficulties calibrated on the same scale with the involvement in decision-making measures. For the decision-making scale, the infit t mean is close to zero, the outfit t is zero, the infit and outfit standard deviations are close to 1, the infit mean square is 1, the outfit mean square is 0.99 (see Table 4.11). These data indicate there is a very good fit of teachers' responses to the measurement model. All items fit within 40 percent of the expected and observed responses. The separability (reliability) of the decision-making scale is considered good (0.81), though a value closer to 1 would be better. The created scale shows a good distribution although there could be some more difficult items and fewer easy items. All thresholds are ordered from low to high indicating consistency in teachers' responses to the items. The final scale for decision-making consists of ten items (listed in Table 4.15) and the scale measure is depicted in Figure 4.12. The decision-making scale is acceptable for this study.

Figure 4.12: Receptivity scale (measured in logits) for independent variable, involvement in decision-making

High involvement in decision-making		Difficult items
+4.0 Logits		
	xxxxx	
	x	
	x	
	xx	Item 85 (UT)
		Item 84 (UT)
+3.0 Logits	x	Item 86 (UT)
		Item 80 (UT)
		Item 78 (UT)
	x	
	xxxxx	
	x	
	x	
	xxxxxxxxxxx	
	x	
+2.0 Logits	x	
	x	
		Item 81 (UT)
	xxxx	
		Item 85 (MT)
		Item 83 (UT)
		Item 82 (UT)
	x	
	xxxxxx	
	xxxxxxxxxxxxx	
	x	Item 79 (UT)
	xxxxxxx	Item 77 (UT)
	x	
+1.0 Logits	x	
	xxxx	
	xxxx	
	xx	
	xxxx	
	xxxxxxxx	
	xxx	
	xxxxx	
	x	Item 86 (MT)
	xxxx	Item 84 (MT)
	x	
0.0 Logits		
	xx	
	x	Item 85 (LT)
	xx	
	x	
	x	
	x	Items 78 (MT), 80 (MT), 82 (MT)
	x	
	xx	
-1.0 Logits		Item 83 (MT)
	x	Item 81 (MT)
		Item 86 (LT)
		Item 80 (LT)
		Item 79 (MT)
		Item 84 (LT)
		Item 81 (LT)
-2.0 Logits	x	
		Item 82 (LT)
		Item 78 (LT)
		Item 83 (LT)
		Item 77 (MT)
-3.0 Logits		
Low involvement in decision-making		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the teacher involvement in decision-making are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 117 teachers (9 cases with perfect scores were discarded).
4. L = 10 items and none were discarded.
5. Teacher involvement in decision-making scores range from -2.0 to +3.8 logits and the item difficulties range from -2.7 to +3.4. All items fit the model within 40% of the expected and observed responses.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with high involvement in decision-making can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

Teacher collaboration

Teacher collaboration at the department and the school level is defined by teacher involvement in the sharing of ideas and teaching resources and in seeking/giving advice and support from/to other teachers in solving teaching related problems. The final set of items used to measure teacher collaboration is shown in Table 4.16.

Table 4.16: Items used to obtain a measure for teacher collaboration

Item	Statement
In this department:	
66	I share teaching resources/materials with other teachers
67	I do not give support to other teachers when they are having problems in their teaching
68	I share teaching ideas with other teachers
69	I can get advice from other teachers if I have a teaching problem
70	Teachers seek my advice about their teaching problems
In this school:	
71	I give support to teachers not in my department when they are having problems with their teaching
72	I share teaching resources/materials with teachers who are not in my department
73	Teachers who are not in my department seek my advice about their teaching problems
74	If I have a teaching problem I can get advice from teachers who are not in my department
75	I don't offer advice to teachers about their teaching unless I am asked for it

The scale for teacher collaboration is shown in Figure 4.13 with teacher collaboration and the item difficulties calibrated on the same scale. The separability (0.78) measure for the teacher collaboration scale is acceptable but could be improved. The created scale of item estimates has a good distribution, although there are too many items at the easy end. The low to high ordering of all thresholds evident in Figure 4.13 indicates consistency in teachers' responses to the item. The fit to the model indicated by infit t (-0.05) and outfit t (0.04) was good. Both weighted and unweighted mean squares were close to 1, also indicating a good fit of the teachers' responses to the measurement model (see Table 4.11). Most items fit within 30 percent of the expected and observed responses, however, two items are within 40 and one within 50 percent. Item 75, in particular, within 50 percent, is not as good a fit as the others. The scale measure is shown in Figure 4.13.

Figure 4.13: Receptivity scale (measured in logits) for independent variable, teacher collaboration

Strong teacher collaboration		Difficult items
+4.0 Logits		
		Item 73 (UT)
	xxxxxxx	
	x	Item 74 (UT)
+3.0 Logits		
	xxxxxxxxx	
	x	Item 76 (UT)
	x	
	xxxxxxx	
		Item 71 (UT)
	x	
+2.0 Logits	xxxxxx	Item 72 (UT)
	x	
	x	
	xxxxxxxxxxx	Item 70 (UT)
		Item 75 (MT)
	x	
	xxxxxxxxxxxxx	
+1.0 Logits	x	
	xxxxxxxxxxxx	
	xx	Item 69 (UT)
	xxxxxxxx	
		Item 66 (UT)
	x	
	x	
	xxxxxxxx	
		Item 73 (MT)
	xxxxxx	
0.0 Logits	x	Item 68 (UT)
	xxxxx	Item 74 (MT)
		Item 67 (UT)
	xx	
	xxxx	
	x	
	xx	Item 70 (MT)
		Item 75 (LT)
- 1.0 Logits		
		Item 71 (MT)
		Item 72 (MT)
		Item 67 (MT)
		Item 67 (LT)
	x	Item 69 (MT)
		Item 74 (LT)
		Items 71 (LT), 73 (LT)
-2.0 Logits		
		Item 76 (MT)
		Item 69 (LT)
		Item 72 (LT)
		Item 66 (MT)
-3.0 Logits		
Weak teacher collaboration		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the teacher collaboration are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. *N* = 122 teachers (3 cases with perfect scores and 1 case with a zero score were discarded).
4. L = 11 items and none were discarded.
5. Teacher collaboration scores range from -1.6 to +3.5 logits and the item difficulties range from -2.7 to +3.8. Eight of the eleven items fit the model within 30% and two items fit the model within 40% of the expected and observed responses. Item 75 fits the model within 50% and is not a good fit.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with strong collaboration can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree). Not all items have three thresholds due to missing responses for some items.

Teacher learning opportunities

The variable, teacher learning opportunities is defined by whether the department and the school provide and encourage learning opportunities for all teachers and support for teachers experiencing difficulty. Learning and implementing new ideas introduced at school/departmental professional development sessions is an example. The final set of items used to measure teacher learning opportunities is shown in Table 4.17.

Table 4.17: Items used to obtain a measure for teacher learning opportunities

Item	Statement
In this department:	
I17	When teachers are not doing a good job, the HOD/TIC works with them to improve their skills
I18	The HOD/TIC provides suggestions to help teachers improve their performance
I19	Other teachers encourage me to try out new ideas
I20	The HOD/TIC provides support materials to help teachers
I21	I do not have opportunities to learn new things
I22	The HOD/TIC encourages teachers to try out new ideas
In this school:	
I23	Other teachers encourage me to try out new ideas
I24	When teachers are not doing a good job, the principal works with them to improve their skills
I25	I do not have opportunities to learn new things
I26	The principal encourages me to try out new ideas
I27	When teachers are not doing a good job, the deputy principal works with them to improve their skills
I28	New ideas presented at whole school professional development sessions are implemented by teachers
I29	The deputy principal encourages me to try new ideas

HOD= Head of Department TIC= Teacher in Charge

The scale for teacher learning opportunities is shown in Figure 4.14 with teacher learning opportunities and the item difficulties calibrated on the same scale.

Figure 4.14: Receptivity scale (measured in logits) for independent variable, teacher learning opportunities

Many teacher learning opportunities		Difficult items
+4.0 Logits		
		Item 124 (UT)
		Item 129 (UT)
		Item 125 (UT)
	x	
	xxxxxx	
		Item 128 (UT)
	x	
	xx	Items 120 (UT), 127 (UT)
+3.0 Logits		
		Item 117 (UT)
	x	Item 118 (UT)
	x	
	xxx	
	x	Item 119 (UT)
		Item 121 (UT)
	xxx	Item 116 (UT)
+2.0 Logits		Item 123 (UT)
	x	
	xxxxx	
	xx	
	xxx	
	x	
	xxxxx	
	x	
	x	Item 126 (UT)
	xxxxxx	
	x	
	xx	
	xxxxxxxxxxx	Item 122 (UT)
+1.0 Logits		
	xx	
	xxxxxx	Item 125 (MT)
	xxxxxxxxxxx	
	x	
	x	
	xxx	
	xx	
	x	
	xxx	
	xx	
		Item 128 (MT)
	x	
	xxxxxxx	
	xx	
0.0 Logits		
	x	
	xx	
	x	Item 127 (MT)
	x	Item 124 (MT)
	xx	
	xx	Item 118 (MT)
	x	
	x	
	x	
	xx	
-1.0 Logits	x	Items 121 (MT), 125 (LT), 129 (MT)
		Item 119 (MT)
	xx	Items 120 (MT), 128 (LT)
		Item 123 (MT)
		Item 122 (MT)
		Items 117 (MT), 121 (LT)
		Item 116 (MT)
		Item 119 (LT)
		Item 118 (LT)
		Item 116 (LT)
		Item 127 (LT)
		Items 117 (LT), 123 (LT)
		Item 126 (MT)
-2.0 Logits		
		Item 122 (LT)
	x	Item 120 (LT)
		Items 124 (LT), 126 (LT)
Few teacher learning opportunities		Easy items

Notes:
1. Each x represents one teacher.
2. The item difficulties and the teacher learning opportunities are calibrated on the same scale. The scale is measured in logits, which is the log odds of teachers agreeing with the items.
3. N = 124 teachers (2 cases with perfect scores were discarded).
4. L = 14 items and none were discarded.

5. Teacher learning opportunities scores range from -2.4 to +3.5 logits and the item difficulties range from -2.7 to +3.8. Item 116 is a poor fit to the model. The other thirteen items fit the model within 30% of the expected and observed responses.
6. The difficult items are at the top of the right-hand side of the scale. Only teachers with Many learning opportunities can agree with these items. The easy items are at the bottom right-hand side of the scale. Most teachers agree with these items.
7. Each item has three thresholds: UT = Upper Threshold (Agree to Strongly Agree), MT = Middle Threshold (Disagree to Agree) and LT = Lower Threshold (Strongly Disagree to Disagree).

For the teacher learning opportunities scale, infit t (-0.23) and outfit t (-0.18), being close to 0 and both mean squares (0.96) being close to 1, indicate a good fit of the teachers' responses to the model, although the standard deviation for infit t (1.57) should be closer to 1 (see Table 4.11).

The negative infit t and outfit t values suggest that some items may be interdependent. The created scale has both too many difficult items and too many easy items. All items fit within 30 percent of the expected and observed responses except for item 116, which has a poor fit. The construct validity of the teacher learning opportunities scale is satisfactory and separability is 0.81 (see Table 4.11). All thresholds are ordered from low to high indicating consistency in teachers' responses to the items. The final set of items for the teacher learning opportunities scale consists of the ten items listed in Table 4.17. The scale measure is shown in Figure 4.14.

Summary

Before testing the hypotheses, it was necessary to investigate the psychometric properties and the conceptual design of the variables. Item analysis was undertaken to ensure that the aggregation of items into the proposed scales satisfied the necessary criteria to form acceptably valid and reliable scales. The item analysis was undertaken using a Extended Logistic Model of Rasch for ordered response items, such as the Likert scale and Semantic Differentials, used in the instrument designed for this study. The analysis involved the following processes:

- an evaluation of whether each item functions as intended;
- an estimation of the relative position (difficulty) of each valid item along the scale;

- an evaluation of whether each teacher's responses form a valid response pattern;
- an estimation of each teacher's relative score (perception) on the scale;
- calibrating the teacher scores and the item scores together on a common scale defined by the items, with a constant interval from one end of the scale to the other so that their numerical values mark off the scale in a linear way;
- calculating the numerical values with standard errors which indicate the precision of the measurements on the scale; and
- checking that the items remain similar in their function and meaning from teacher to teacher so that they are seen as stable and useful measures.

As a result of the validation and reliability processes described above, the scales created for the dependent variables Overall Feelings, Attitudes, Behaviour Intentions and Behaviour were acceptable for this study. However, all the scales would need to be improved for further research. For the group one independent variables, the acceptable scales were; non-monetary cost benefits, alleviation of fears and concerns, significant other support, and feelings compared to the previous system. For the six group two independent variables, the acceptable scales for the study were: shared teaching goals, cohesiveness, team teaching, involvement in decision-making and teacher learning opportunities. As mentioned before, all the scales need further development work for further research.

The next chapter, Chapter five, describes the sample and data collection process and provides details obtained from a preliminary analysis of the characteristics of the sample in terms of teachers and schools.

CHAPTER 5
SAMPLE, DATA COLLECTION AND PRELIMINARY QUALITATIVE DATA ANALYSIS

Introduction

This chapter discusses the characteristics of the sample of teachers and schools, the process used for the collection of the data on teacher receptivity towards the use of Student Outcome Statements and outlines the preliminary analysis of the data. The analysis has been undertaken in accordance with the model (see Chapter three) and details the responses for the dependent variable, teacher receptivity towards Student Outcome Statements, which is measured by Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. Preliminary analysis has been undertaken of both the group one and group two independent variables. The analysis includes individual item information and material from the open-ended question. The reporting of the preliminary analysis data is essentially qualitative in nature.

Sample

All 90 government high and senior high schools in Western Australia were invited to participate in the survey. From these schools 140 teachers completed questionnaires that were returned from 34 different schools. Fourteen of these questionnaires were invalid as teachers ignored the instructions and completed them for classes of Year 11 that were using the Secondary Education Authority's Common Assessment Framework. They were excluded from the sample. The 126 valid questionnaires came from 30 different government secondary schools across Western Australia. The sample showed that nearly 43% of the respondents had participated in the trial. Given that only 25 senior high schools and possibly some 120 secondary teachers from those schools throughout the system had been part of the trial, it is considered that the 126 valid responses from the 30 schools was a good response and there does not appear to be any reason why this is not a representative sample. Work on the Student Outcome

Statements in English and Mathematics had begun in the early nineties and it was expected that a large number of responses would come from these two areas. The majority of responses came from the English Learning Area (32), fifteen from the Mathematics Learning Area, fourteen from Health and Physical Education and a small number from each of the other Learning Areas.

Characteristics of the Sampie

Size and type of school

The questionnaires came from a variety of schools including about half from metropolitan schools and half from country schools and just over one third came from schools that were classed as disadvantaged. Table 5.1 provides details of the number of respondents from each school size category classified according to student numbers. School size, based on student numbers, varied from schools of less than 300 students to schools of between 1200 and 1500. The greatest number of respondents (35%) came from schools with enrolments of 600-799. Teachers from schools with less than 300 made up 19.8% of the sample and those from schools with 800-999 accounted for a further 19%. The lowest response rate (0.8%) was from schools with a population of 1000-1199.

Table 5.1: School size

	School size	Frequency	Percent	Valid percent	Cumulative percent
	less than 300	25	19.8	20.5	20.5
	300 - 599	14	11.1	11.5	32.0
	600 - 799	44	34.9	36.1	68.0
	800 - 999	24	19.0	19.7	87.7
	1000 - 1199	1	0.8	0.8	88.5
	1200 - 1499	14	11.1	11.5	100.0
Valid Total		122	96.8	100.0	
Missing		4	3.2		
Total		126	100.0		

Number of respondents

Thirty schools provided 126 respondents; 12 schools had only one respondent, nine schools had between two and five respondents, six schools had between five and seven. One school had 12 respondents, another 13 and the largest number for a single school was 25 (see Table 5.2). Ten per cent of the questionnaires represented individual, single responses from each of 12 schools. The other 18 schools had more than one respondent and three of these schools had ten or more teachers who responded.

Table 5.2: Number of questionnaires and respondents per school

Number of schools	Number of questionnaires	Number of respondents
12	1	12
9	2-4	29
6	5-7	35
1	12	12
1	13	13
1	25	25
30	126	126

Teaching status, age and sex

Table 5.3 shows that just under two thirds of the respondents were classroom teachers (65.1%) with no responsibilities in administration. Over 26% had administrative responsibilities being either Heads of Department or Teachers-in-charge of subject areas. The respondents were made up of Heads of Department (19.8%), Teachers-in-Charge of Subjects (7.9%), classroom teachers (65.1%) and other teachers such as teacher librarians (7.1%) (see Table 5.3). Thirty-five per cent of the respondents were male and 65% female. The sample attracted a younger group of teachers than the average state age of approximately 42 (Education Department, 1999). Over 60% of the respondents were below the age of 40. Some 28% were aged between 41 and 50 and approximately the same number were aged between 20 and 30. Overall the group was aged between 20 and over 61 years (see Table 5.4).

Table 5.3: Teaching status

	Status	Frequency	Percent	Valid Percent	Cumulative percent
	Head of Department	25	19.8	19.8	19.8
	Teacher-in-Charge	10	7.9	7.9	27.8
	Teacher	82	65.1	65.1	92.9
	Other	9	7.1	7.1	100.0
Valid Total		126	100.0	100.0	
Total		126	100.0		

Table 5.4: Teachers' age

	Age	Frequency	Percent	Valid percent	Cumulative percent
	20 - 30	35	27.8	28.0	28.0
	31 - 40	44	34.9	35.2	63.2
	41 - 50	36	28.6	28.8	92.0
	51 - 60	9	7.1	7.2	99.2
	61 +	1	0.8	0.8	100.0
Valid Total		125	99.2	100.0	
Missing		1	0.8		
Total		126	100.0		

Years of teaching experience

The sample included a range of inexperienced and experienced teachers whose classroom involvement varied from one year to over 30 years. The largest number of teachers had between 11 and 20 years of experience with over 15% having between 21 and 30 years of experience. Teachers with less than five years experience accounted for almost 30% of the respondents (see Table 5.5).

Table 5.5: Years of teaching experience

	Years	Frequency	Percent	Valid percent	Cumulative percent
	less than 1	5	4.0	4.0	4.0
	1 - 2	10	7.9	7.9	11.9
	3 - 5	22	17.5	17.5	29.4
	6 - 10	26	20.6	20.6	50.0
	11 - 20	41	32.5	32.5	82.5
	21 - 30	20	15.9	15.9	98.4
	31+	2	1.6	1.6	100.0
Valid Total		126	100.0	100.0	
Total		126	100.0	100.0	

Data Collection

Packages containing questionnaires for teachers and instructions for principals and teachers, were prepared for each secondary school and distributed to each secondary principal at the Western Australian Secondary Principals' Association March, 1997 Conference. Principals distributed the questionnaires during Term 2, 1997 (April - July). In the main, teachers mailed the questionnaire directly back to the researcher.

Follow-up faxes and phone calls were made to every school which had not responded by the beginning of June, 1997. This process served as a reminder and resulted in more questionnaires being returned. Many of the schools contacted confirmed that they had issued the questionnaires to teachers and that very few teachers were in fact using the Student Outcome Statements. Some schools confirmed that they did not have any teachers using Student Outcome Statements. No school refused to participate. However, once principals had distributed the questionnaires they left it to the teachers to complete and forward to the researcher. The questionnaire for teachers was headed *Teachers' Attitudes Towards the Use of Student Outcome Statements* and stated explicitly that it was designed for those secondary teachers. Heads of Department and Teachers-in-Charge of Departments who were already using Student Outcome Statements and that it was designed to collect information about the use of Student Outcome Statements by secondary teachers.

Preliminary Qualitative Data Analysis on Variables Associated with the Implementation of Student Outcome Statements

Use of Student Outcome Statements

This section examines a variety of variables associated with the use of Student Outcome Statements including the length of time of use, the extent of their use and their purpose. Although only the extent of their use and their purpose were included in the model additional data were collected and briefly reported on in this section and could be used as a basis for future analysis and study. Almost 24% of

the respondents had been using Student Outcome Statements for less than seven months and some 36% had been using them for over two years (see Table 5.6). Sixty-four per cent of the respondents were using Student Outcome Statements with all of their lower school classes and only 9% were using them with just one class. (See Table 5.7) Student Outcome Statements were being used by the whole school in almost 35% of the cases, only in one department in 19% of the cases and, in just over 3% of cases, Student Outcome Statements were being used by that teacher only in the school (see Table 5.8).

Table 5.6: Length of time using Student Outcome Statements

	Time	Frequency	Percent	Valid percent	Cumulative percent
	0 - 6 months	30	23.8	24.0	24.0
	7 - 12 months	14	11.1	11.2	35.2
	13 - 18 months	32	25.6	25.6	60.8
	19 - 23 months	3	2.4	2.4	63.2
	2 - 3 years	27	21.6	21.6	84.8
	3 years +	19	15.2	15.2	100.0
Valid Total		125	100.0	100.0	
Missing		1			
Total		126			

Table 5.7: Extent of use of Student Outcome Statements with classes

	Classes	Frequency	Percent	Valid percent	Cumulative percent
	All	81	64.3	66.9	66.9
	Some	28	22.2	23.1	90.1
	One	12	9.5	9.9	100.0
Valid Total		121	96.0	100.0	
Missing		5	4.0		
Total		126	100.0		

Table 5.8: Extent of use of Student Outcome Statements by teachers

	Used by	Frequency	Percent	Valid percent	Cumulative percent
	whole school	45	35.7	36.6	36.6
	only respondent's department	24	19.0	19.5	56.1
	other departments also	50	39.7	40.7	96.7
	only by respondent	4	3.2	3.3	100.0
Valid Total		123	97.6	100.0	
Missing		3	2.4		
Total		26	100.0		

Decision to use Student Outcome Statements

The decision to use Student Outcome Statements was made by the whole school in over 36% of cases and in 42% of cases that decision was made by individual teachers. Only 5.6% reported that the principal had made the decision to use Student Outcome Statements (see Table 5.9).

Table 5.9: Decision to use Student Outcome Statements

	Decision made by	Frequency	Percent	Valid percent	Cumulative percent
	Principal	7	5.6	6.1	6.1
	whole school	46	36.5	40.0	46.1
	some individuals	53	42.1	46.1	92.2
	only by respondent	9	7.1	7.8	100.0
Valid Total		115	91.3	100.0	
Missing		11	8.7		
Total		126	100.0		

Purpose of the use of Student Outcome Statements

The most significant reason for using Student Outcome Statements was for the purpose of monitoring student achievement (96%), followed by planning teaching and learning programs (91%) and collecting student assessment information (86%). Seventy-nine per cent of the respondents used Student Outcome Statements for reporting student achievement to parents and 65% used them for school development planning.

Preliminary Data Analysis for the Dependent Variables

The preliminary findings with regard to the dependent variables, teacher receptivity towards the new system which is measured by Overall Feelings, Attitudes, Behaviour Intentions and Behaviour are reported. The discussions are essentially qualitative and are based on the results for all items, whereas the discussions in Chapter four, five, six and seven are based on the results which are finally included in the scales.

Overall Feelings

Teachers' Overall Feelings towards the use of Student Outcome Statements were positive and supportive. Teachers stated that they will probably support the use of Student Outcome Statements in the next few years (90.5%) and that they support the use of Student Outcome Statements now (91.2%). Only 8% agreed with the statement "I dislike using Student Outcome Statements" (see Table 5.10).

Table 5.10: Overall Feelings

			Percent				
	Mean	St D	SA	A	D	SD	Missing
33. I have opposed the use of SOS.	1.48	.59	0.8	2.4	38.9	54.8	3.2
34. I will probably support the use of SOS in he next few years.	3.38	67	42.1	48.4	0	3.2	6.3
35. I dislike using SOS.	1.62	.72	2.4	5.6	38.9	46.0	7.1
36. I will probably dislike the use of SOS in the next few years.	1.56	.68	1.6	4.8	34.9	46.0	12.7
37. I support the use of SOS.	3.44	.62	46.0	45.2	1.6	1.6	5.6

n = 126. Strongly Agree (SA)= 4. Strongly Disagree (SD) =1. Row totals may not sum to 100% due to rounding.

SOS = Student Outcome Statements

Attitudes

Although the responses on the semantic differential scale were generally positive, over half of the respondents reported that Student Outcome Statements were complicated (63.5%), time inefficient (54.7%) and unclear (53.2%). As the Student Outcomes Statements are so new it may be that they appear to be complicated and unclear to teachers as they are unfamiliar with them. The lack of familiarity may also contribute to the perception that they are also time inefficient. It is possible that as teachers become more familiar with their use that they could become less complicated, less unclear and consequently more time

efficient. Just over 30 % of the respondents reported that Student Outcome Statement were idealistic and 22.2% that they were unnecessary (see Table 5.11). It should be noted that item not variable results are reported here and all 13 responses are discussed. Table 4.3 only reports on nine items as four items were deleted due to poor fit when using the measurement tool.

Table 5.11: Attitudes

	Mean	St D	Percent SA	A	D	SD	Missing	
Satisfactory	3.29	76	41 3	41 3	7 9	3.2	6 3	unsatisfactory
valuable	3.46	66	50 8	35 7	6 3	0 8	6 3	worthless
wise	3 14	72	27 0	51 6	7 9	3 2	10 3	unwise
good	3 32	64	6 5	46 8	6 3	0 8	9 5	bad
intelligent	3.22	70	32 5	48 4	9 5	1 6	7 9	absurd
permissive	3 27	72	34 9	46 0	4 8	3 2	11 1	restrictive
realistic	2.80	92	22 2	40 5	21 4	9 5	6 3	idealistic
effective	3 14	76	31 0	46 8	11 9	3 2	7 1	ineffective
necessary	3 03	86	29 4	38 9	17 5	4 8	9 5	unnecessary
uncomplicated	2.09	78	1.6	27 0	41 3	22 2	7 9	complicated
clear	2.33	87	7 9	3 10	36 5	16 7	7 9	unclear
time efficient	2.25	85	6 4	31 0	34 1	20 6	7 9	time inefficient
liberating	3.12	81	31 7	44 4	11 1	4 8	7 9	constraining

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding

Behaviour Intentions

The respondents were positive about their Behaviour Intentions toward Student Outcome Statements. Only 4% reported that in their behaviour and communication with others they will actively oppose the use of Student Outcome Statements and just over 6% reported that they would avoid discussing issues about the use of Student Outcome Statements. Just over 90% of teachers reported that they will probably say that Student Outcome Statements are useful for monitoring student achievement; for planning teaching and learning programs; and for school development planning. Seventy-three per cent indicated they would probably say that Student Outcome Statements are useful for reporting student achievement to parents (see Table 5.12) Semantic Differentials).

Table 5.12: Behaviour Intentions

In my behaviour and communication with others I will probably:	Mean	StD	Percent SA	A	D	SD	Missing
46. actively oppose the use of SOS	1.44	63	1.6	2.4	33.3	61.1	1.6
47. say that SOS are useful for monitoring student achievement.	3.28	57	31.7	60.3	3.2	0.8	4.0
48. say that SOS are useful for reporting student achievement to parents	3.01	77	24.6	48.4	13.5	4.0	9.5
49. say that SOS are useful for planning teaching/learning programs	3.27	56	31.7	58.7	5.6	0	4.0
50. say that SOS *are not* useful for school development planning	1.65	63	1.6	2.4	45.2	35.7	15.1
51. avoid discussing issues about the use of SOS	1.62	67	1.6	5.6	44.4	45.2	3.2

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1. Row totals may not sum to 100% due to rounding

SOS = Student Outcome Statements

Behaviour

The Behaviour of the respondents in terms of attendance at Student Outcome Statement professional development sessions, sharing knowledge with colleagues and generally voicing support for Student Outcome Statements were supportive and positive. Teachers reported that they had shared their knowledge about the use of Student Outcome Statements with other teachers (90.5%) and attended meetings and professional development to improve their knowledge about the use of Student Outcome Statements (90.2%). They disagreed with the statement that they had refused to participate in forums which address the use of Student Outcome Statements (96%). Of concern is that 60% of the respondents had not provided written feedback to central office or district office even though 50% to 60% of teachers felt that they were complicated, unclear and time inefficient (see Table 5.11).

Table 5.13: Behaviour

	Mean	StD	Percent SA	A	D	SD	Missing
59. I have spoken in support of the use of SOS in forums such as staff or departmental meetings.	2.82	1.01	27.0	41.3	14.3	15.1	2.4
60. I have openly voiced my concerns about the use of SOS in forums such as staff or departmental meetings.	2.14	1.01	9.5	29.4	24.6	34.9	1.6
61. I have attended meetings and professional development to improve my knowledge about the use of SOS.	3.20	90	42.9	37.3	9.5	7.1	3.2
62. I have refused to participate in forums that address the use of SOS.	1.08	30	0	0.8	6.3	89.7	3.2
63. I have shared my knowledge about the use of SOS with other teachers.	3.48	69	54.8	35.7	4.0	2.4	3.2
64. I have provided written feedback to Central Office or District Office personnel on aspects of SOS.	2.03	1.17	15.1	22.2	10.3	49.2	3.2

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1. Row totals may not sum to 100% due to rounding

SOS = Student Outcome Statements

Preliminary Data Analysis for the Group One Independent Variables

This section reports on the preliminary findings regarding the four group one independent variables. Group one deals with the non-monetary cost benefits of Student Outcome Statements (Items 28-32), alleviation of fears and concerns (Items 52-58), significant other support (Items 38-45) and feelings compared to the previous system. (Unit Curriculum), (Items 18-27).

Non-monetary cost benefits

Table 5.14 reinforces the positive benefits which teachers stated were gained by the use of Student Outcome Statements. They felt that in weighing up the balance between any extra work generated by using Student Outcome Statements and their satisfaction with teaching, the use of Student Outcome Statements was worthwhile (81%). The extra work was beneficial for better student classroom learning (80.2%) but agreement was not as strong for student assessment (67%).

Table 5.14: Non-monetary cost benefits

	Mean	St D	Percent SA	A	D	SD	Missing
28. In weighing up the balance between any extra work generated for you by SOS and *your satisfaction with teaching*, the use of SOS is worthwhile.	3.03	67	18.3	62.7	7.1	4.0	7.9
29. In weighing up the balance between any extra work generated for you by SOS and *your home life*, the use of SOS is worthwhile.	2.61	83	9.5	43.7	24.6	9.5	12.7
30. In weighing up the balance between any extra work generated for you by SOS and *better student classroom learning*, the use of SOS is worthwhile	3.19	69	28.6	51.6	7.1	2.4	10.3
31. In weighing up the balance between the total problems for you and *the total benefits for the student*, the use of SOS is worthwhile.	3.05	79	20.6	54.0	7.9	4.0	13.5
32. In weighing up the balance between any extra responsibility for student assessment and *your work load*, the use of SOS is worthwhile.	2.81	73	9.5	56.3	12.7	6.3	15.1

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1. Row totals may not sum to 100% due to rounding.

SOS = Student Outcome Statements

Alleviation of fears and concerns

Only 48.4 % of teachers reported that there were regular school meetings at which they can raise their concerns about Student Outcome Statements. There was good

general school support whenever they have problems with the implementation of Student Outcome Statements in the classroom (55.8%) and whenever there were Student Outcome Statement problems there was a senior person at the school to whom they could turn to for advice (58%). They reported that there was at least one school person with whom they can talk about any student problems associated with Student Outcome Statements (88.8%). Only 32% of respondents indicated that they could access support from District Office and 50.8% reported that they could access support from Central Office. Both of these items had high rates of missing responses, 46% and 28.6% respectively (see Table 5.15).

Table 5.15: Alleviation of fears and concerns

	Mean	StD	Percent SA	A	D	SD	Missing
52. There are regular school meetings at which I can raise my concerns about SOS	2.55	.95	16.7	31.7	31.7	13.5	6.3
53. Whenever there are SOS problems there is a senior person at this school to whom I can turn for advice	2.68	.95	17.5	40.5	19.0	13.5	9.5
54. There is good general school support whenever I have problems with the implementation of SOS in the classroom.	2.66	.94	15.9	38.9	19.8	12.7	12.7
55. There is at least one school person with whom I can talk about any student problems associated with SOS.	3.20	.73	32.5	56.3	4.0	4.8	2.4
56. Any concerns I have about SOS can be solved informally in general conversation at school	2.80	.88	17.5	52.4	14.3	11.1	4.8
57. I can access Central Office support to obtain advice about SOS.	2.82	.83	13.5	37.3	15.1	5.6	28.6
58. I can access District Office support to obtain advice about SOS.	2.65	.86	7.9	24.6	15.9	5.6	46.0

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding

SOS = Student Outcome Statements

Significant other support

The responses in this section were generally very positive. However, items 41 and 43 have not added a great deal of value as 52% and 43% respectively of the teachers did not respond to these items. In addition, 36% did not respond to item 42. In all three cases it appears that the teachers did not have sufficient information about whether the district superintendent, learning area superintendent or other teachers in the school supported Student Outcome Statements. It is likely that they had very limited contact with the three groups.

Table 5.16: Significant other support

	Mean	StD	Percent SA	A	D	SD	Missing
38. The principal at this school supports SOS	3.50	.52	41.3	38.1	0.8	0.0	19.8
39. Most teachers in this department support SOS	3.21	.67	31.0	50.8	7.9	1.6	8.7
40. My closest colleague at this school does not support SOS	1.58	.68	1.6	4.8	35.7	44.4	13.5
41. The district superintendent supports SOS	3.32	.54	15.9	27.8	1.6	0.0	54.8
42. Most teachers in this school support SOS	2.94	.88	19.0	21.4	18.3	2.4	38.9
43. The learning area superintendent supports SOS	3.66	.48	34.9	18.3	0.0	0.0	46.8
44. A deputy principal at this school supports SOS	3.42	.61	31.0	32.5	1.6	0.8	34.1
45. A HOD/TIC in my main teaching area supports SOS	3.53	.68	54.0	30.2	2.4	2.4	11.1

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1. Row totals may not sum to 100% due to rounding.

SOS = Student Outcome Statements. HOD= Head of Department. TIC =Teacher in Charge.

Feelings compared to the previous system (Unit Curriculum)

Teachers' feelings toward the use of Student Outcome Statements compared to their feelings about the Unit Curriculum were generally more positive. Feelings toward Student Outcome Statements and the Unit Curriculum were compared in terms of student learning experiences, monitoring, assessment and reporting of student learning, teacher accountability and classroom management. Teachers agreed that Student Outcome Statements address the needs of individual students better (83.4%), provide for better student learning (81.8%), more relevant content (78.2%) and they better describe student learning (81.8%). There was strong support for the notion that Student Outcome Statements were better than the Unit Curriculum in facilitating judgements about student learning achievement (80.1%) and effective reporting on student achievement (69.1%).

Table 5.17: Feelings Compared to the Previous System (Unit Curriculum)

In comparison to the Unit Curriculum, the use of Student Outcome Statements allows me to	Mean	StD	Percent SA	A	D	SD	Missing
18. provide for better student learning.	3.22	.65	29.4	52.4	6.3	1.6	10.3
19. manage my classroom better.	2.60	.71	7.9	39.7	36.5	3.2	12.7
20. provide more relevant content.	3.27	.74	37.3	38.9	10.3	1.6	11.9
21. address the needs of individual students better.	3.33	.67	39.7	43.7	7.9	0.8	7.9
22. provide more varied experiences for the students.	3.12	.73	28.6	46.8	14.3	1.6	8.7
23. better describe student learning.	3.30	.72	38.1	43.7	6.3	2.4	9.5
24. make better judgements about student learning achievement.	3.26	.73	36.5	43.7	7.9	2.4	9.5
25. plan more relevant learning experiences for my students.	3.19	.68	28.6	50.8	8.7	1.6	10.3
26. demonstrate my accountability.	2.91	.72	15.9	47.6	18.3	2.4	15.9
27. report more effectively on student achievement.	3.13	.79	31.0	38.1	15.1	2.4	13.5

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1. Row totals may not sum to 100% due to rounding.

Preliminary Data Analysis for the Group Two Independent Variables

This section reports on the preliminary findings regarding the six group two independent variables, shared goals (shared teaching goals and cohesiveness), collaboration (team teaching, involvement in decision-making and teacher collaboration) and teacher learning opportunities. Group two deals with shared goals as shown by shared teaching goals (Items 87-107) and cohesiveness (Items 96-107), collaboration as shown by team teaching (Items 109-115), decision-making (Items 77-86) and teacher collaboration (Items 66-76) and teacher learning opportunities (Items 116-129).

Shared teaching goals

As expected, there were differences between the goals shared at the department level compared to the goals shared at the school level (See Table 5.18). Teachers were also asked to compare the values and philosophy of education of the school's principal to their own. In all items dealing with colleagues at the department level there was a high level of agreement of shared goals: agreement on outcomes students should be achieving (61.9%); and agreement that most teachers within the department and the Head of Department or Teacher-in Charge of the Subject have similar values and philosophies of education (77.7% and 81% respectively). Interestingly, 36.5% of the respondents disagreed with the statement, "In this department there are explicit departmental guidelines about the things teachers are to emphasise in their teaching". The perceived shared goals were also apparent at the school level though, as expected, the level of agreement was lower for the items dealing with perceived school-wide values and philosophy of education (65.9%) and agreement on the outcomes students should be achieving (64.1%). However, perceived school-wide commitment to student learning was high (88.1%). There were 65.9% of respondents who agreed that their principal had similar values and philosophy of education as their own, though 26.2% did not respond to this item. The missing responses were considerably higher for the

Table 5.18: Shared teaching goals

	Mean	SD	Percent SA	A	D	SD	Missing
87 In this department the teaching staff agree on the outcomes our students should be achieving	3.17	.65	22.2	59.7	15.1	3.2	.8
88 In this department teachers do not share a high level of commitment to student learning	1.40	.67	2.4	3.2	25.4	66.7	2.4
89 In this department the values and philosophy of education of the HOD/TIC are similar to my own	3.15	.76	31.0	50.0	8.7	3.0	6.3
90 In this department there are explicit departmental guidelines about the things teachers are to emphasise in their teaching	2.72	.83	16.7	41.3	30.2	6.3	5.6
91 In this department most teachers have values and philosophies of education similar to my own	3.03	.67	19.0	58.7	11.9	2.4	7.9
92 In this school teachers share a high level of commitment to student learning	1.53	.64	5.6	32.5	43.8	8	6.3
93 In this school most teachers have values and philosophies of education similar to my own	2.97	.71	16.7	48.4	14.3	2.4	18.3
94 In this school the teaching staff agree on the outcomes our students should be achieving	2.97	.69	16.7	48.4	15.9	1.6	17.5
95 In this school the values and philosophy of education of the principal are similar to my own	3.18	.67	23.0	42.9	6.3	1.6	26.2

n = 126 Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding

HOD= Head of Department TIC =Teacher in Charge

Cohesiveness

There were marked contrasts between the department and school items dealing with cohesiveness. In response to the item "most teachers know what I do in the classroom" 79.4% of respondents agreed that this was the case at department level yet only 44.5% agreed that this was the case across the school. Again, 73% of respondents reported that most of the teachers within the department know what their teaching goals are, yet only 46.8% agreed that most of the teachers in their school know what their teaching goals are. Again 88.1% of teachers reported that they tended to do things that are likely to be accepted by most teachers in the department, yet only 81% agreed that this was the case across the whole school. Sixty-six per cent of respondents felt that what goes on in their department is their responsibility, and only 59.5% felt that what goes on in their school is their responsibility. In response to the item "I tend to do things that most teachers don't understand", 88.9% disagreed with the statement at department level and 76.2% disagreed with the statement at school level. As expected this tends to validate the data: cohesiveness is greater in the smaller unit, the departments, than it is in the larger more diverse unit, the school.

Table 5.19: Cohesiveness

	Mean	StD	Percent SA	A	D	SD	Missing
96 In this department most of the teachers know what I do in my classroom	3.10	.68	25.4	54.0	12.7	1.7	8.3
97 In this department I tend to do things that are likely to be accepted by only a few teachers in my department	1.72	.60	0.8	4.8	55.6	32.5	6.3
98 In this department I feel that what goes on in this department is my responsibility	2.91	.89	23.8	42.9	15.9	7.9	9.5
99 In this department most of the teachers *don't know* what my teaching goals are like	2.00	.71	2.4	15.9	52.4	20.6	8.7
100 In this department I tend to do things that most teachers in my department don't understand	1.71	.60	0.8	4.8	54.8	34.1	5.6
101 In this department I work for days without talking to colleagues about my teaching	1.40	.72	3.2	3.2	22.2	67.5	4.0
102 In this school most of the other teachers *don't* know what I do in my classroom	2.42	.85	7.1	36.5	31.0	13.5	11.9
103 In this school most of the other teachers know what my teaching goals are	2.55	.78	7.9	38.9	32.5	7.1	13.5
104 In this school I tend to do things that are likely to be accepted by only a few teachers in my school	1.76	.59	0.8	4.8	54.0	27.0	13.5
105 In this school I tend to do things that most teachers in my school don't understand	1.86	.65	0.8	11.1	51.6	24.6	11.9
106 In this school I feel that what goes on in this school is my responsibility	2.77	.79	14.3	45.2	23.8	5.6	11.1
107 In this school I work for days without talking to colleagues about my teaching.	1.66	.75	1.6	10.3	34.9	45.2	7.9

n = 126 Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding.

Team teaching

In response to the question, "have you been involved in team teaching?", 67.5% responded positively. 21.4% responded negatively and there were 10.3% of the responses missing. Of those who responded to this section on team teaching, a large percentage, up to 49.2%, missed various items. Those who were involved in team teaching were positive in their responses (See Table 5.20). They enjoyed sharing team teaching responsibilities (74.6%), valued team teaching (73.8%), agreed that there should be more team teaching (67.1%), looked forward to team teaching (72.4%) and liked sharing team teaching responsibilities with other teachers (70.6%). Where teachers were asked to make judgements about team teaching with regard to the students the number of missed responses was very high. In response to the statement that team teaching is best for students, 50.8% agreed, 9.5% disagreed and there were 39.7% missed responses. The same pattern emerged for the statement "students prefer team teaching" where 41.2% agreed, 9.5% disagreed and 49.2% did not respond. This may suggest that the teachers do not know how team teaching impacts on their students. Those items dealing with team teaching (109-115) recorded the highest number of missing responses, ranging from 24.6% to 49.2%

Table 5.20: Team teaching

	Mean	STD	Percent SA	A	D	SD	Missing
109. I enjoy sharing team teaching responsibilities	3.4	.55	31.7	42.9	0	0.8	24.6
110. I value team teaching.	3.4	.61	33.3	40.5	0	1.6	24.6
111. There should be more team teaching	3.4	.67	36.5	31.0	2.4	1.6	28.6
112. I *do not* look forward to team teaching	1.6	.68	2.4	0.8	35.7	35.7	25.4
113. Team teaching is best for students	3.03	.67	12.7	38.1	7.9	1.6	39.7
114. Students prefer team teaching	2.90	.68	7.1	34.1	7.1	2.4	49.2
115. I like to share team teaching responsibilities with other teachers.	3.27	.59	23.8	46.8	0.8	1.6	27.0

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding.

Involvement in decision-making

The level of involvement in decision-making of teachers was very high in departments and not as high across the whole school. In their departments, teachers participated in selecting instructional materials and resources (95.3%), determining the content of professional development sessions (83.4%) and determining appropriate instructional methods (91.3%). They were involved in decisions in the department which were related to the use of Student Outcome Statements (81.8%). Teachers reported high levels of encouragement by the Head of Department or the Teacher-in-Charge of the subject, to modify the curriculum to meet students' needs (90.5%). The school influences outside the department were considerably less with only 41.3% of respondents reporting that they were involved in decisions outside their department related to Student Outcome Statements, although both the principal (75.4%) and the deputy principal (61.9%) were seen to encourage teachers to modify the curriculum to meet the needs of students. Teacher participation in determining the type of whole school professional development was high (72.2%). As stated in the previous section on cohesiveness, involvement in decision-making was significantly higher at the department level compared to the school level. The smaller curriculum units facilitated the involvement in decision-making more than across the whole school.

Table 5.21: Involvement in decision-making

		Mean	Std D	Percent SA	A	D	SD	Missing
77	In this department teachers participate in selecting instructional material/resources	3.52	.55	53.2	42.1	2.4	.8	2.4
78	In this department teachers participate in determining the content of the professional development sessions we have	3.13	.69	27.8	55.6	10.3	2.4	3.9
79	In this department teachers *do not* participate in determining appropriate instructional methods	1.52	.62	0.8	4.0	39.7	51.6	3.9
80	In this department the HOD/TIC participates in instructional related decision-making	3.14	.72	27.0	54.8	6.3	4.0	7.9
81	In this department teachers are encouraged by the HOD/TIC to modify the curriculum to meet students needs	3.34	.68	41.3	49.2	4.0	2.4	3.2
82	In this department I am involved in decisions which are related to the use of SOS	3.12	.75	42.9	38.9	8.7	2.4	7.1
83	In this school teachers are encouraged by the principal to modify the curriculum to meet students needs	3.42	.65	40.5	34.9	4.8	0.8	19.0
84	In this school teachers participate in determining the type of whole school professional development we have	2.96	.77	21.4	50.8	17.5	4.0	6.3
85	In this school I am involved in decisions outside of my department which are related to the use of Student Outcome Statements	2.49	1.00	18.3	23.0	34.1	15.1	9.5
86	In this school teachers are encouraged by a deputy principal to modify the curriculum to meet students' needs.	2.97	.83	22.2	39.7	15.1	4.8	18.3

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding

SOS = Student Outcome Statements HOD= Head of Department TIC =Teacher in Charge

Teacher collaboration

As with the other group two independent variables, information about teacher collaboration was sought at the department and the school level. Levels of teacher collaboration were higher at the department level than at the whole-of-school level (See Table 5.22). In their departments, teacher collaboration was high: sharing teaching resources/materials (94.4%), support of colleagues (92.9%), obtaining advice from colleagues (92.9%) and being asked for advice (83.4%). Across the school, the level of teacher collaboration was high but not as high as in departments: sharing of teaching resources/materials (86.5%), support of colleagues (88.2%), obtaining advice from colleagues (74.6%) and being asked for advice (66.7%). Overall, although teacher collaboration at the school level was not as strong as it was at the department level, the respondents indicated high levels of teacher collaboration (See Table 5.22).

Table 5.22: Teacher collaboration

	Mean	SD	Percent SA	A	D	SD	Missing
66 In this department I share teaching resources/materials with other teachers	3.63	.52	61.9	32.5	1.6	0.0	4.0
67 In this department I *do not* give support to other teachers when they are having problems in their teaching	1.23	.53	1.6	0.8	15.1	77.8	4.8
68 In this department I share teaching ideas with other teachers	3.74	.44	71.4	24.6	0.0	0.0	4.0
69 In this department I can get advice from other teachers if I have a teaching problem	3.54	.59	55.6	37.3	2.4	0.8	4.0
70 In this department teachers seek my advice about their teaching problems	3.31	.67	40.5	42.9	11.1	0.0	5.6
71 In this school I give support to teachers who are not in my department when they are having problems with their teaching	3.24	.62	31.0	57.1	4.8	1.6	5.6
72 In this school I share teaching resources/materials with teachers who are not in my department	3.28	.65	34.1	52.4	6.3	0.8	6.3
73 In this school teachers who are not in my department seek my advice about their teaching problems	2.81	.68	11.1	55.6	21.4	3.2	8.7
74 In this school if I have a teaching problem I get advice from teachers who are not in my department.	2.94	.69	15.9	58.7	15.1	3.2	7.1
75 In this school I don't offer advice to teachers about their teaching unless I am asked for it	2.63	.76	11.1	41.3	36.5	4.8	6.3
76 In this school I share ideas with teachers who are not in my department	3.23	.51	26.2	65.9	4.0	0.0	4.0

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding

Teacher learning opportunities

Teachers' learning opportunities are facilitated at both the department and the school level (See Table 5.23). For example, both the department and whole school received strong levels of agreement from 88.9% and 90.5% of teachers respectively, about the notion that there were opportunities for teachers to learn new things. Heads of Department and Teachers-in-Charge of subjects were seen to provide assistance (73.8%), suggestions (87.3%) and encouragement (87.3%) to their teachers. Only 42.2% and 53.2% of teachers thought that Principals and Deputy Principals worked directly with teachers when teachers needed to improve their skills, a far lower level of support than that received from Heads of Department and Teachers-in-Charge of subjects (73.8%). In addition, 87.3% of respondents indicated that Heads of Department and Teachers-in-Charge of subjects provided further support by offering suggestions for improvement and encouragement to try out new ideas. Colleagues within the department (87.3%) and others within the school (70.6%) were also influential in encouraging respondents to try out new ideas.

Table 5.23: Teacher learning opportunities

	Mean	StD	Percent SA	A	D	SD	Missing
116. In this department new ideas presented at department level professional development sessions are implemented by teachers	3.12	.58	18.3	65.9	3.2	2.4	10.3
117. In this department when teachers are not doing a good job, the HOD/TIC works with them to improve their skills	3.02	.72	19.0	54.8	9.5	4.0	12.7
118. In this department the HOD/TIC provides suggestions to help teachers improve their performance	3.14	.68	25.4	61.9	4.0	4.0	4.8
119. In this department other teachers encourage me to try out new ideas	3.07	.57	17.5	69.8	7.9	1.6	3.2
120. In this department the HOD/TIC provides support materials to help teachers	3.18	.68	27.8	59.5	3.2	4.0	5.6
121. In this department I *do not* have opportunities to learn new things	1.57	.67	1.6	4.8	39.7	49.2	4.8
122. In this department the HOD/TIC encourages teachers to try out new ideas	3.24	.65	31.0	56.3	4.0	2.4	6.3
123. In this school other teachers encourage me to try out new ideas.	2.86	.59	8.7	61.9	18.3	1.6	9.5
124. In this school when teachers are not doing a good job, the principal works with them to improve their skills	2.57	.84	8.7	32.5	24.6	7.9	26.2
125. In this school I *do not* have opportunities to learn new things.	1.61	.69	0.8	3.2	49.2	41.3	5.6
126. In this school the principal encourages me to try out new things.	2.94	.70	15.1	52.4	13.5	3.2	15.9
127. In this school when teachers are not doing a good job, the deputy principal works with them to improve their skills.	2.76	.80	11.1	42.1	16.7	6.3	23.8
128. In this school new ideas presented at whole school professional development sessions are implemented by teachers	2.98	.52	9.5	61.9	9.5	0.8	18.3
129. In this school the deputy principal encourages me to try out new ideas.	2.78	.73	9.5	48.4	17.5	4.8	19.8

n = 126. Strongly Agree (SA)= 4, Strongly Disagree (SD) =1 Row totals may not sum to 100% due to rounding.

HOD= Head of Department TIC =Teacher in Charge

Open-ended section

At the end of the questionnaire teachers were invited to comment on any aspect of this research. Twenty-three teachers responded to this invitation and many made multiple comments on various aspects of Student Outcome Statements. There were over 20 suggestions made as to what could make the implementation of Student Outcome Statements more successful and beneficial for everyone concerned. Some attempt has been made to categorise the comments and some examples are given below.

Support (9 comments)

I think this is a great idea, but hope the information gets back to the school. Many teachers feel on their own at this school - including me and there is no forum to discuss our feelings regarding the successes and failures of using Student Outcome Statements.

Time (7 comments)

It is unfortunately time consuming. Special professional development courses must be run to aid teachers in placing students on levels and doing so quickly. Time management with SOS needs to be addressed. Marking is now a time consuming chore that will push teachers out of English and keep possible English teachers away.

Definable goals (2 comments)

I think it has fantastic potential, but is losing many good students and teachers due to poor structure, lack of support and clearly definable goals. I think the 'old' system of marking can work well in conjunction with SOS

Revision (3 comments)

The issue of the language of SOS and reporting to parents in any meaningful way appear to be a long way from solution. As an English teacher the statements' documentation needs revision. The more I use them, the less precise I find them to be.

Generally positive (16 comments)

Overall, I find them succinct, effective, easy to "read" for the kids and it is easier to assess specific outcome.

The sooner SOS are implemented and the values associated with them and "team teaching" are appreciated by all educators, the better it will be for all concerned particularly the students we teach and are responsible to teach!

Generally negative (18 comments)

I just wish the people who are deciding on the what, how and wherefore would come to a final conclusion on what the outcomes actually are. It is commendable to refine them, but each time this is done, the classroom teacher has to re-write programs. I also have a concern about assessment, but this is a much larger problem.

If I was a graduate teacher I would be very confused as to what other skills and concepts I should be teaching, other than those set down in the outcomes.

Cross-tabulations

As a preliminary investigation of the relationships between teachers' receptivity to Student Outcome Statements and the independent and situation variables, two-way contingency tables were constructed. These tables, together with the chi square statistic indicate whether there is any bivariate relationship between the variables. The relationships investigated were based on those predicted from the model. In order to simplify the data for each variable, response categories were modified. Responses for the clusters of items contributing to each dependent and independent variable were combined and averaged. The cross-tabulations, then constructed, showed whether or not there was any bivariate relationship between the variables.

Cross-tabulations were also produced and χ^2 calculated for each of the dependent variables against the situation variables, to show if there were any bivariate relationships present, as predicted in the model. There were problems with empty cells or cells where expected frequency was less than 5 for most of the cross-tabulations. If χ^2 cells are less than 5, then χ^2 may be in error. Therefore, where it was feasible to do so, cells were combined to ensure a frequency greater than 5.

Cross-tabulations of the Dependent Variables against Group One Independent Variables

Overall Feelings

Table 5.24: Overall Feelings by non-monetary cost benefits

Non-monetary cost benefits	Overall Feelings	
	Negative (N=8)	Positive (N=69)
Disagree (N=30)	20.0%	80.0%
Agree (N=47)	4.3%	95.7%

No of missing observations = 49 n=77
$\chi^2 = 4.876$ df = 1 $p<0.05$

In comparison with those who agree, teachers who disagree that there are benefits arising from Student Outcome Statements are less likely to have positive Overall Feelings toward the Statements. However, the majority of these teachers who disagree about the benefits are also likely to have positive Overall Feelings. The evidence supports a small, positive bivariate relationship between Overall Feelings and non-monetary cost benefits.

There is no significant relationship between Overall Feelings and alleviation of fears and concerns.

Table 5.25: Overall Feelings by significant other support

	Overall Feelings	
Significant other support	Negative (N=8)	Positive (N=65)
Disagree (N=22)	22.7%	77.3%
Agree (N=51)	5.9%	94.1%

No of missing observations = 53 N=73
χ^2 = 4.469 df = 1 p<0.05

Teachers who agree that there is significant other support for Student Outcome Statements are more likely to have positive Overall Feelings toward the Statements, although the majority of those who disagree about support also have positive Overall Feelings. This evidence supports a small positive bivariate relationship between Overall Feelings and significant other support.

Table 5.26: Overall feelings by feelings compared with the previous system

	Overall Feelings	
Feelings compared to previous system	Negative (N=8)	Positive (N=72)
Disagree (N=18)	22.2%	77.8%
Agree (N=62)	6.5%	93.5%

No of missing observations = 46 N=80
χ^2 = 3.855 df = 1 p<0.05

As might be expected, teachers who view Student Outcome Statements favourably in comparison with the previous system (Unit Curriculum) are more likely to have positive Overall Feelings toward Student Outcome Statements. However, the majority of those who view the Statements unfavourably also have positive Overall Feelings towards them. This evidence supports a small, positive bivariate relationship between Overall Feelings and feelings compared to the previous system.

Attitudes

Table 5.27: Attitudes by non-monetary cost benefits

Non-monetary cost benefits	Attitudes	
	Negative (N=22)	Positive (N=77)
Disagree (N=27)	59.3%	40.7%
Agree (N=72)	8.3%	91.7%

No of missing observations = 27 N=99
$\chi^2 = 29.464$ df = 1 p<0.001

Teachers who agree that there are non-monetary cost benefits arising from Student Outcome Statements appear much more likely to have positive Attitudes towards the Statements, whereas those who disagree about the benefits are more likely to have negative Attitudes. This evidence supports a positive bivariate relationship between Attitudes and non-monetary cost benefits.

Table 5.28: Attitudes by alleviation of fears and concerns

Alleviation of fears and concerns	Attitudes	
	Negative (N=25)	Positive (N=86)
Disagree (N=39)	35.9%	64.1%
Agree (N=72)	15.3%	84.7%

No of missing observations = 15 N=111
$\chi^2 = 6.164$ df = 1 p<0.05

Teachers who believe that there are means available to alleviate their fears and concerns about Student Outcome Statements are more likely to have positive Attitudes towards the Statements than those who do not believe there are means available. This supports a small positive bivariate relationship between Attitudes and alleviation of fears and concerns.

Table 5.29: Attitudes by significant other support

Significant other support	Attitudes: Negative (N=22)	Positive (N=75)
Disagree (N=24)	45.8%	54.2%
Agree (N=73)	15.1%	84.9%

No of missing observations = 29 N=97
$\chi^2 = 9.748$ df = 1 p<0.05

Teachers who agree that there is significant other support for Student Outcome Statements are more likely to have positive Attitudes towards their use, although the majority of those who disagree about availability of support also have positive Attitudes. This evidence supports a small positive bivariate relationship between Attitudes and significant other support.

Table 5.30: Attitudes by feelings compared to the previous system

Feelings compared to the previous system	Attitudes: Negative (N=22)	Positive (N=81)
Disagree (N=16)	56.3%	43.8%
Agree (N=87)	14.9%	85.1%

No of missing observations = 23 N=103
$\chi^2 = 13.729$ df = 1 p<0.001

Teachers who view Student Outcome Statements favourably in comparison with the previous (Unit Curriculum) system are more likely to have positive Attitudes towards the Statements, while those who view the Statements unfavourably are more likely to have negative Attitudes. Thus, this evidence supports a positive bivariate relationship between Attitudes and feelings compared to the previous system.

Behaviour Intentions

Table 5.31: Behaviour Intentions by non-monetary cost benefits

Non-monetary cost benefits	Behaviour Intentions Negative (N=15)	Positive (N=81)
Disagree (N=28)	42.9%	57.1%
Agree (N=68)	4.4%	95.6%

No of missing observations = 30 N=96
χ^2 = 22.236 df = 1 p<0.001

Teachers who agree that there are non-monetary cost benefits arising from Student Outcome Statements appear much more likely to have positive Behaviour Intentions towards their use, although the majority of those who disagree are also likely to have positive Behaviour Intentions. This evidence supports a positive bivariate relationship between Behaviour Intentions and non-monetary cost benefits. There is no significant relationship between Behaviour Intentions and alleviation of fears and concerns.

Table 5.32: Behaviour Intentions by significant other support

Significant other support	Behaviour Intentions Negative (N=17)	Positive (N=75)
Disagree (N=25)	40.0%	60.0%
Agree (N=67)	10.4%	89.6%

No of missing observations = 34 N=92
χ^2 = 10.555 df = 1 p<0.005

Teachers who agree that there is significant other support for Student Outcome Statements are more likely to have positive Behaviour Intentions towards the Statements, although the majority of those who disagree about support also have positive behaviour Intentions. This evidence supports a small positive bivariate relationship between Behaviour Intentions and significant other support.

Table 5.33: Behaviour Intentions by feelings compared to the previous system

Feelings compared to the previous system	Behaviour Intentions: Negative (N=19)	Behaviour Intentions: Positive (N=80)
Disagree (N=18)	61.1%	38.9%
Agree (N=81)	9.9%	90.1%

No of missing observations = 27 N=99
$\chi^2 = 24.927$ df = 1 p<0.001

Teachers who view Student Outcome Statements favourably in comparison with the previous (Unit Curriculum) system are more likely to have positive Behaviour Intentions towards Student Outcome Statements, whereas those who view them unfavourably are more likely to have negative Behaviour Intentions. Thus, this evidence supports a positive bivariate relationship between Behaviour Intentions and feelings compared to the previous system.

Behaviour

There is no significant relationship between Behaviour and non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system.

Cross-tabulations of the Dependent Variables against Group Two Independent Variables

Overall feelings

There is no significant relationship between Overall Feelings, shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities.

Attitudes

There is no significant relationship between Attitudes, shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities.

Behaviour Intentions

There is no significant relationship between Behaviour Intentions, shared teaching goals, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities.

Behaviour

There is no significant relationship between Behaviour, shared teaching goals, cohesiveness and team teaching.

Table 5.34: Behaviour by involvement in decision-making

	Behaviour	
Involvement in decision-making	Negative (N=24)	Positive (N=91)
Disagree (N=14)	50.0%	50.0%
Agree (N=101)	16.8%	83.2%

No of missing observations = 11 N=115
χ^2 = 8.191 df = 1 p<0.005

Teachers who participate in decision-making are more likely to be positive in their behaviour towards Student Outcome Statements, although equal proportions of those who disagree are positive and negative. This evidence supports a small, positive bivariate relationship between Behaviour and involvement in decision-making.

Table 5.35: Behaviour by teacher collaboration

	Behaviour	
Teacher Collaboration	Negative (N=27)	Positive (N=93)
Disagree (N=16)	43.8%	56.3%
Agree (N=104)	19.2%	80.8%

No of missing observations = 6 N=120
χ^2 = 4.781 df = 1 p<0.05

Teachers who collaborate with other teachers are more likely to be positive in their behaviour towards Student Outcome Statements, although a majority of those who disagree are also positive in their Behaviour. Thus, this evidence supports a small, positive bivariate relationship between Behaviour and collaboration. There is no significant relationship between Behaviour and teacher learning opportunities.

Cross-tabulations of the Dependent Variables against the Situation Variables

Table 5.36: Behaviour by school location

	Behaviour	
School Location	Negative (N=29)	Positive (N=94)
Metro (N=64)	31.3%	68.8%
Country (N=59)	15.3%	84.7%

No of missing observations = 3 N=123
χ^2 = 4.359 df = 1 p<0.05

Teachers who work in country schools are more likely than those who work in the metropolitan area to be positive in their Behaviour towards Student Outcome Statements. Thus, this evidence supports a small, positive bivariate relationship between Behaviour and school location.

Table 5.37: Behaviour by teacher status

	Behaviour	
Teacher Status	Negative (N=29)	Positive (N=95)
HOD/TIC (N=35)	8.6%	91.4%
Teacher (N=89)	29.2%	70.8%

No of missing observations = 2 N=124
χ^2 = 5.974 df = 1 p<0.05

Teachers in higher status positions (Heads of Departments and Teachers in Charge) are more likely than classroom teachers to be positive in their Behaviour towards Student Outcome Statements. Thus, this evidence supports a small, positive bivariate relationship between Behaviour and teacher status.

Summary

There are thirty main conclusions that can be drawn from the preliminary qualitative data analysis.

1. In almost 35% of the cases, Student Outcome Statements were being used by the whole school and in just over 3% of cases, they were being used by one teacher only in the school.

2. Sixty-four per cent of teachers were using Student Outcome Statements with all of their lower school classes.

3. The most significant reason for using Student Outcome Statement was for the purpose of monitoring student achievement (96%), followed by planning teaching and learning programmes (91%) and collecting student assessment information (84%).

4. Teachers stated that they support the use of Student Outcome Statements (91.2%).

5. Over half of the respondents reported that Student Outcome Statements were complicated (63.5%), time inefficient (54.7%) and unclear (53.2%).

6. The behaviours of the respondents in terms of attendance at Student Outcome Statement professional development sessions, sharing knowledge with colleagues and generally voicing support for Student Outcome Statements were supportive and positive.

7. Teachers felt that in weighing up the balance between any extra work generated by using Student Outcome Statements and their satisfaction with teaching, the use of Student Outcome Statements was worthwhile (81%).

8. Teachers were positive about the opportunity to alleviate their fears and concerns with 88% reporting that there was at least one school person with whom they can talk about any student problems associated with Student Outcome Statements.

9. Teachers' feelings towards the use of Student Outcome Statements compared to their feelings about the Unit Curriculum (the previous system) were generally positive. In particular, they agreed that Student Outcome Statements were better than the Unit Curriculum in facilitating judgement about student learning achievement (80.1%).

10. There was a moderate level of agreement of shared goals at the department level including agreement on outcomes students should be achieving. Teachers also reported a high level of school-wide commitment to student learning. At the department level, the respondents reported that most teachers within the department and the Head of Department or Teacher-in-Charge of the Subject have similar values and philosophies of education.

11. There were marked contrasts between the department and school items dealing with cohesiveness and, as expected, they showed more cohesion at the department level than throughout the school.

12. The level of involvement in decision-making of teachers was very high in departments and not as high across the whole school.

13. In their departments, teacher collaboration was high. Across the school, the level of teacher collaboration was high, but not as high as in departments.

14. Both the department and the whole school were seen to strongly facilitate opportunities for teachers to learn new things.

The conclusions for the cross-tabulations are set out in three sections: those relating to the relationships between the dependent and group one independent variables, those between dependent and group two independent variables and those between the dependent and situation variables.

Relationships between the dependent and group one independent variables

There seem to be small positive relationships between:

15. Overall Feelings and non-monetary cost benefits, significant other support and feelings compared to the previous system;

16. Attitudes and non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system;

17. Behaviour Intentions and non-monetary cost benefits, significant other support and feelings compared to the previous system.

There are no significant relationships between:

18. Overall Feelings and alleviation of fears and concerns;

19. Behaviour Intentions and alleviation of fears and concerns;

20. Behaviour and non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system.

Relationships between the dependent and group two independent variables

There seem to be small positive relationships between:

21. Behaviour and involvement in decision-making and teacher collaboration.

There are no significant relationships between:

22. Overall Feelings and shared teaching goals, cohesiveness, team teaching, involvement in decision making, teacher collaboration and teacher learning opportunities;

23. Attitudes and shared teaching goals, cohesiveness, team teaching, involvement in decision making, teacher collaboration and teacher learning opportunities;

24. Behaviour Intentions and shared teaching goals, cohesiveness, team teaching, involvement in decision, making teacher collaboration and teacher learning opportunities;

25. Behaviour and shared teaching goals, cohesiveness, team teaching and teacher learning opportunities.

Relationships between the dependent and situation variables

26. There seem to be small positive relationships between Behaviour and school location and teacher status.

There are no significant relationship between:

27. Overall Feelings and school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purposes to which Student Outcome Statements are put;

28. Attitudes and school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purposes to which Student Outcome Statements are put;

29. Behaviour Intentions and school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purposes to which Student Outcome Statements are put;
30. Behaviour and school size, socio-economic status, department size, department type, teacher experience, sex, age, use of Student Outcome Statements and purposes to which Student Outcome Statements are put.

The next chapter examines the relationships between the dependent variables and the independent and situation variables using zero-order correlations and these will test more clearly the implied relationships found in the qualitative analysis.

CHAPTER 6
DATA ANALYSIS: PART A
ZERO-ORDER CORRELATIONS

Introduction

The model of teacher receptivity towards the introduction of Student Outcome Statements suggests a number of bivariate relationships between the group one and group two independent variables and receptivity and between the situation variables and receptivity. This chapter describes these relationships. The scale scores derived from the Rasch analysis, as described in Chapter four, are used in the calculation of correlation coefficients.

Pearson product-moment correlations for pairs of variables are known as zero-order correlations because no controls for the influence of other variables are made. The Pearson correlation coefficient r is used to measure the strength of relationship between two interval-level variables. The strength of the relationship indicates both the goodness of fit of a linear regression line to the data and, when r is squared, the proportion of variance in one variable explained by the other (refer for example to Nie et al. *SPSS Statistical Package for the Social Sciences*, 1975, p280). The correlation ranges from zero (no relationship) to +1 (perfect positive relationship) or –1 (perfect negative relationship). The larger the absolute value of the coefficient, the stronger the linear association.

The relationships are described in three sections. The first section involves the relationships between the group one independent variables and receptivity towards the change to Student Outcome Statements. The second section involves the relationship between the group two independent variables and receptivity and the third section involves the relationship between the situation variables and receptivity.

Zero-order Correlations between the Dependent Variables and the Group One Independent Variables

The group one independent variables are non-monetary cost benefit, alleviation of fears and concerns, significant other support and feelings compared to the previous system. Receptivity is measured in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. It was expected that there would be moderate positive correlations between each of the group one variables and each aspect of receptivity. The zero order correlations are presented in Table 6.1.

Table 6.1: Zero-order correlations between the dependent variables and the group one independent variables

	Non-monetary cost benefits N=106	Alleviation of fears and concerns N=123	Significant other support N=101	Feelings compared to previous system N=84
Overall Feelings	0.41****	0.04	0.34***	0.59****
Attitudes	0.59****	0.40****	0.38***	0.60****
Behaviour Intentions	0.56****	0.29*	0.35****	0.64****
Behaviour	0.23***	-0.02	0.22	0.27**

*α sig at 0.05 **α sig at 0.001 ***α sig at 0.005 ****α sig at 0.001

Moderate positive (Max 0.64) to zero (Min -0.02) correlations were found between the group one independent variables and the four aspects of receptivity: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. In regard to non-monetary cost benefits, these are: 0.41 ($p<0.001$) for the relationship between non-monetary cost benefits and Overall Feelings: 0.59 ($p<0.001$) for the relationship between non-monetary cost benefits and Attitudes: 0.56 ($p<0.001$) for the relationship between non-monetary cost benefits and Behaviour Intentions: and 0.23 ($p<0.05$) for the relationship between non-monetary cost benefits and Behaviour. These results support the view that there is a moderate to strong positive relationship between non-monetary cost benefits and three aspects of receptivity: non-monetary cost benefits explains 17% of the variance in Overall Feelings; 35% of the variance in Attitudes; and 31% of the variance in Behaviour Intentions. This means, for example, that the higher the non-monetary cost

benefits resulting from weighing up the balance between any extra work generated by Student Outcome Statements and satisfaction with teaching, or home life, or better student learning, the higher the teacher's Overall Feelings towards Student Outcome Statements, and vice versa. Non-monetary cost benefits has a less strong relationship with Behaviour, explaining only 5% of the variance.

In regard to alleviation of fears and concerns, the correlations are: 0.04 (not significant) for the relationship between alleviation of fears and concerns and Overall Feelings; 0.40 ($p<0.001$) for the relationship between alleviation of fears and concerns and Attitudes; 0.29 ($p<0.05$) for the relationship between alleviation of fears and concerns and Behaviour Intentions; and -0.02 (not significant) for the relationship between alleviation of fears and concerns and Behaviour. These results support the view that there is a moderate positive relationship between alleviation of fears and concerns and Attitudes, with alleviation of fears and concerns explaining 16% of the variance. Alleviation of fears and concerns explains only 8% of the variance of Behaviour Intentions and there does not appear to be a relationship with Overall Feelings or Behaviour.

In regard to significant other support, the correlations are: 0.34 ($p<0.005$) for the relationship between significant other support and Overall feelings; 0.38 ($p<0.005$) for the relationship between significant other support and Attitudes; 0.35 ($p<0$ .001) for the relationship between significant other support and Behaviour Intentions; and 0.22 (not significant) for the relationship between significant other support and Behaviour. These results support the view that there is a moderate positive relationship between significant other support and the four aspects of receptivity, with significant other support explaining 12% of the variance in Overall Feelings, 14% of the variance in Attitudes, and 12% of the variance in Behaviour Intentions and 5% of the variance in Behaviour.

In regard to feelings compared to the previous system, the correlations are: 0.59 ($p<0.001$) for the relationship between Overall Feelings and feelings compared to the previous system: 0.60 ($p<0.001$) between Attitudes and feelings compared to

the previous system: 0.64 ($p<0.001$) for the relationship between Behaviour Intentions and feelings compared to the previous system and 0.27 ($p<0.05$) for the relationship between Behaviour and feelings compared to the previous system. These results mean that there is a moderate to strong positive relationship between feelings compared to the previous system and three aspects of receptivity, with feelings compared to the previous system explaining 35% of the variance of Overall Feelings, 36% of the variance of Attitudes and 41% of the variance of Behaviour Intentions. Feelings compared to the previous system explains only 7% of the variance of Behaviour reflecting the low positive correlation between the two variables.

Zero-order Correlations between the Dependent Variables and the Group Two Independent Variables

The group two independent variables are shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities. As in the previous section, receptivity is measured in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. It was expected that there would be moderate positive correlations between each of the group two variables and each aspect of receptivity. The zero order correlations are presented in Table 6.2.

Table 6.2: Zero-order correlations between the dependent variables and the group two independent variables

	Shared teaching goals N=122	Cohesiveness N=122	Team teaching N=120	Involvement in decision making N=116	Collaboration N=120	Teacher Learning Opportunities N=122
Overall feelings	0.02	0.01	-0.16	0.30**	0.10	0.20
Attitudes	0.16	0.16*	-0.19*	0.17*	0.11	0.20*
Behaviour intentions	0.14	0.01	-0.08	0.31****	0.15*	0.20*
Behaviour	0.10	0.15	-0.29***	0.46****	0.33****	0.10

*α sig at 0.05 **α sig at 0.01 ***α sig at 0.005 ****α sig at 0.001

Moderate positive to low negative correlations were found between the group two variables and the four aspects of receptivity: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. In regard to shared teaching goals, these are: 0.02 (not significant) for the relationship between shared teaching goals and Overall Feelings; 0.16 (not significant) for the relationship between shared teaching goals and Attitudes; 0.14 (not significant) for the relationship between shared teaching goals and Behaviour Intentions; and 0.10 (not significant) for the relationship between shared teaching goals and Behaviour. These results suggest that shared teaching goals and the four aspects of receptivity are not related.

In regard to cohesiveness, the correlations are: 0.01 (not significant) for the relationship between Overall Feelings and cohesiveness; 0.16 ($p<0.05$) for the relationship between Attitudes and cohesiveness; 0.01 (not significant) for the relationship between Behaviour Intentions and cohesiveness; and 0.15 (not significant) for the relationship between Behaviour and cohesiveness. These results mean that there is a low positive relationship between cohesiveness and one aspect of receptivity, with cohesiveness explaining 3% of the variance of Attitudes. Cohesiveness does not appear to be related to the other three aspects of receptivity: Overall Feelings; Behaviour Intentions; and Behaviour.

In regard to team teaching, the correlations are: -0.16 (not significant) for the relationship between Overall Feelings and team teaching; -0.19 ($p<0.05$) for the relationship between Attitudes and team teaching; -0.08 (not significant) for the relationship between Behaviour Intentions and team teaching; and -0.29 ($p<0.005$) for the relationship between Behaviour and team teaching. These results mean that there is a low negative relationship between team teaching and two aspects of receptivity, with team teaching explaining 8% of the variance of Behaviour Intentions and 4% of the variance of Attitudes. This implies that one factor influencing whether teachers intend to support Student Outcome Statements and have supportive attitudes towards Student Outcome Statements may be that they do not enjoy and value team teaching. Team teaching does not appear to be related to Overall Feelings or Behaviour Intentions.

In regard to involvement in decision-making, the correlations are 0.30 ($p<0.01$) for the relationship between Overall Feelings and involvement in decision-making; 0.17 ($p<0.05$) for the relationship between Attitudes and involvement in decision-making team teaching; 0.31 ($p<0.001$) for the relationship between Behaviour Intentions and involvement in decision-making; and 0.46 ($p<0.001$) for the relationship between Behaviour and involvement in decision-making team. These results mean that there is a low to moderate positive relationship between involvement in decision-making and the four aspects of receptivity, with involvement in decision-making explaining 9% of the variance in Overall Feelings, 3% of the variance in Attitudes, 10% of the variance in Behaviour Intentions and 21% of the variance in Behaviour.

In regard to teacher collaboration, the correlations are: 0.10 (not significant) for the relationship between Overall Feelings and teacher collaboration; 0.11 (not significant) for the relationship between Attitudes and teacher collaboration; 0.15 ($p<0.05$) for the relationship between Behaviour Intentions and teacher collaboration; and 0.33 ($p<0.001$) for the relationship between Behaviour and teacher collaboration. These results mean that there is a low to moderate positive relationship between teacher collaboration and two aspects of receptivity, with teacher collaboration explaining 2% of the variance in Behaviour Intentions and 11% of the variance in Behaviour. There does not appear to be a relationship between teacher collaboration and Overall Feelings or teacher collaboration and Attitudes.

In regard to teacher learning opportunities, the correlations are: 0.20 (not significant) for the relationship between Overall Feelings and teacher learning opportunities; 0.20 ($p<0.05$) for the relationship between Attitudes and teacher learning opportunities; 0.20 ($p<0.05$) for the relationship between Behaviour Intentions and teacher learning opportunities; and 0.10 (not significant) for the relationship between Behaviour and teacher learning opportunities. These results mean that there is a low positive relationship between teacher learning

opportunities and two aspects of receptivity, with teacher learning opportunities explaining 4% each of the variance of Attitudes and Behaviour Intentions. There does not appear to be a relationship between teacher learning opportunities and Overall Feelings or between teacher learning opportunities and Behaviour.

Zero-order Correlations between the Dependent Variables and the Situation Variables

The situation variables are school size, school location (metropolitan versus country), socio-economic status, department size, department type (mathematics and English versus other), teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements. Socio-economic status is based on whether the school type is receiving special funding. Use of Student Outcome Statements is based on the length of time Student Outcome Statements have been used, the extent to which they are being used in lower school and by the whole school and whether the decision to use them was made by the principal or whole school or solely by the teacher. Purpose of Student Outcome Statements is based on whether Student Outcome Statements are being used as part of Education Department's *Gifted and Talented Program*, whether there was involvement in the Education Department's trialing of Student Outcome Statements, whether the Monitoring Standards in Education Tests are used and whether Student Outcome Statements are used for a number of specific purposes (monitoring student achievement, collecting assessment information, reporting student achievement to parents, planning teaching/learning programs, school development planning. As in the previous sections, receptivity is measured in four aspects: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. It was expected that there would be low positive correlations between each of the situation variables and each aspect of receptivity. The zero order correlations are presented in Table 6.3.

Table 6.3: Zero-order correlation between the dependent variables and the situation variables

	School size N=84-120	School location N=84-123	Socio-economic status N=75-110	Dept size N=82-120	Dept type N=70-102
Overall feelings	0.07	0.10	-0.16	-0.06	0.02
Attitudes	-0.16	0.05	-0.02	-0.08	0.17
Behaviour intentions	-0.21*	0.06	-0.02	-0.02	0.07
Behaviour	-0.04	0.06	-0.04	0.00	0.13

*α sig at 0.05 **α sig at 0.01 ***α sig at 0.005 ****α sig at 0.001

	Teacher status N=85-124	Teacher experience N=85-124	Sex N=85-123	Age N=85-123	Use of SOS N=56-78	Purpose of SOS N=62-97
Overall feelings	0.15	0.22*	-0.03	0.03	0.23	-0.08
Attitudes	-0.00	-0.06	0.12	-0.00	0.13	0.01
Behaviour intentions	0.16	0.15	0.05	0.05	0.20	0.04
Behaviour	0.19*	0.22*	-0.05	0.12	0.29*	-0.04

*α sig at 0.05 **α sig at 0.01 ***α sig at 0.005 ****α sig at 0.001

Low positive to low negative correlations and were found between the situation variables and the four aspects of receptivity: Overall Feelings, Attitudes, Behaviour Intentions and Behaviour. In regard to school size, these are: 0.07 (not significant) for the relationship between school size and Overall Feelings; -0.16 (not significant) for the relationship between school size and Attitudes; -0.21 ($p<0.05$) for the relationship between school size and Behaviour Intentions; and -0.04 (not significant) for the relationship between school size and Behaviour. These results mean that there is a low negative relationship between school size and one aspect of receptivity, Behaviour Intentions, with school size explaining 4% of the variance of Behaviour Intentions. One explanation is that teachers' intentions in regard to Student Outcome Statements are correlated to a small degree with school size because teachers in small schools are more likely than those in large schools to have their fears and concerns alleviated through better support and communication in small schools where teachers know each other and this in turn leads to stronger receptivity to Student Outcome Statements. There does not appear to be a relationship between school size and Overall Feelings, school size and Attitudes or school size and Behaviour.

In regard to school location, the correlations are: 0.10 (not significant) for the relationship between school location and Overall Feelings; 0.05 (not significant) for the relationship between school location and Attitudes; 0.06 (not significant) for the relationship between school location and Behaviour Intentions; and 0.06 (not significant) for the relationship between location and Behaviour. These results suggest that there is no relationship between school location and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

In regard to socio-economic status, the correlations are: -0.16 (not significant) for the relationship between socio-economic status and Overall Feelings; -0.102 (not significant) for the relationship between socio-economic status and Attitudes; -0.02 (not significant) for the relationship between socio-economic status and Behaviour Intentions; and -0.04 (not significant) for the relationship between socio-economic status and Behaviour. These results suggest that there is no relationship between socio-economic status and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

In regard to department size, the correlations are: -0.06 (not significant) for the relationship between department size and Overall Feelings; -0.08 (not significant) for the relationship between department size and Attitudes; -0.02 (not significant) for the relationship between department size and Behaviour Intentions; and 0.00 (not significant) for the relationship between department size and Behaviour. These results suggest that there is no relationship between department size and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

In regard to department type, the correlations are: 0.02 (not significant) for the relationship between department type and Overall Feelings; 0.17 (not significant) for the relationship between department type and Attitudes; 0.07 (not significant) for the relationship between department type and Behaviour Intentions; and 0.13 (not significant) for the relationship between department type and Behaviour.

These results suggest that there is no relationship between department type and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

In regard to teacher status, the correlations are: 0.15 (not significant) for the relationship between teacher status and Overall Feelings; -0.00 (not significant) for the relationship between teacher status and Attitudes; 0.16 (not significant) for the relationship between teacher status and Behaviour Intentions; and 0.19 ($p<0.05$) for the relationship between teacher status and Behaviour. These results mean that there is a low positive relationship between teacher status and one aspect of receptivity, Behaviour, with teacher status explaining 4% of the variance in Behaviour. This implies that whether or not teachers are Head of Departments or Teachers-in-charge or a classroom teacher may be one factor in their actual behaviour towards Student Outcome Statements, with those in the higher status positions more likely to behave favourably. There does not appear to be a relationship between teacher status and Overall Feelings, teacher status and Attitudes or teacher status and Behaviour Intentions.

In regard to teacher experience, the correlations are: 0.22 ($p<0.05$) for the relationship between teacher experience and Overall Feelings; -0.06 (not significant) for the relationship between teacher experience and Attitudes; 0.15 (not significant) for the relationship between teacher experience and Behaviour Intentions; and 0.22 ($p<0.05$) for the relationship between teacher experience and Behaviour. These results mean that there are small positive relationships between teacher experience and two aspects of receptivity, Overall Feelings and Behaviour, with teacher experience explaining 5% each of the variance in both Overall Feelings and Behaviour; that is length of teaching experience may be one factor influencing teachers' Overall Feelings towards Student Outcome Statements and their actual Behaviour towards them. One explanation is that experienced teachers are more likely than inexperienced teachers to provide significant other support which is related to Overall Feelings and Behaviour towards Student Outcome Statements.

There does not appear to be a relationship between teacher experience and Attitudes and teacher experience and Behaviour Intentions.

In regard to sex, these are: -0.03 (not significant) for the relationship between sex and Overall Feelings; 0.12 (not significant) for the relationship between sex and Attitudes; 0.05 (not significant) for the relationship between sex and Behaviour Intentions; and -0.05 (not significant) for the relationship between sex and Behaviour. These results suggest that there is no relationship between sex and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

In regard to age these are: 0.03 (not significant) for the relationship between age and Overall Feelings; -0.00 (not significant) for the relationship between age and Attitudes; 0.05 (not significant) for the relationship between age and Behaviour Intentions; and 0.12 (not significant) for the relationship between age and Behaviour. These results suggest that there is no relationship between age and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

In regard to use of Student Outcome Statements, the correlations are: 0.23 (not significant) for the relationship between use of Student Outcome Statements and Overall Feelings; 0.13 (not significant) for the relationship between use of Student Outcome Statements and Attitudes; 0.20 (not significant) for the relationship between use of Student Outcome Statements and Behaviour Intentions; and 0.29 ($p<0.05$) for the relationship between use of Student Outcome Statements and Behaviour. These results mean that there is a low positive relationship between use of Student Outcome Statements and one aspect of receptivity, Behaviour, with use of Student Outcome Statements explaining 8% of the variance of Behaviour. There does not appear to be a relationship between use of Student Outcome Statements and Overall Feelings, use of Student Outcome Statements and Attitudes or use of Student Outcome Statements and Behaviour Intentions.

In regard to purpose of Student Outcome Statements, the correlations are: -0.08 (not significant) for the relationship between purpose of Student Outcome Statements and Overall Feelings; 0.01 (not significant) for the relationship between purpose of Student Outcome Statements and Attitudes; 0.04 (not significant) for the relationship between purpose of Student Outcome Statements and Behaviour Intentions; and -0.04 (not significant) for the relationship between purpose of Student Outcome Statements and Behaviour. These results suggest that there is no relationship between purpose of Student Outcome Statements and any of the four aspects of receptivity: Overall Feelings; Attitudes; Behaviour Intentions; and Behaviour.

Summary

The model of teacher receptivity towards the introduction of Student Outcome Statements suggests a number of bivariate relationships between the group one and group two independent variables and receptivity and between the situation variables and receptivity. These relationships were tested and the following conclusions are set out in three sections. The first deals with the relationship between the dependent variables and group one independent variables, the second deals with the dependent variables and group two independent variables and the third with the dependent variable and situation variables.

Correlations between the dependent variables and the group one independent variables

Overall Feelings has:

1. a moderate positive relationship with non-monetary cost benefits, significant other support and feelings compared to the previous system; and
2. no relationship with alleviation of fears and concerns.

Attitudes has:

3. moderate positive relationships with non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system.

Behaviour Intentions has:

4. moderate positive relationships with non-monetary cost benefits, significant other support and feelings compared to the previous system; and
5. a low positive relationship with alleviation of fears and concerns.

Behaviour has:

6. a low positive relationship with non-monetary cost benefits and feelings compared to the previous system; and
7. no relationship with alleviation of fears and concerns and significant other support.

Correlations between the dependent variables and the group two independent variables

Overall Feelings has:

8. a low positive relationship with involvement in decision-making; and
9. no relationship with shared teaching goals, cohesiveness, team teaching, teacher collaboration and teacher learning opportunities.

Attitudes has:

10. low positive relationships with cohesiveness, involvement in decision-making and teacher learning opportunities;
11. a low negative relationship with team teaching; and
12. no relationship with shared teaching goals and teacher collaboration.

Behaviour Intentions has:

13. low positive relationships with involvement in decision-making, teacher collaboration and teacher learning opportunities; and
14. no relationship with shared teaching goals, cohesiveness and team teaching;

Behaviour has:

15. a moderate positive relationship with involvement in decision-making;
16. a low positive relationship with teacher collaboration; and
17. a negative relationship with team teaching; and
18. no relationship with shared teaching goals, cohesiveness and teacher learning opportunities;

Correlations between the dependent variables and the situation variables

Overall Feelings has:

19. a low positive relationship with teacher experience; and
20. no relationship with school size, school location, socio-economic status, department size, department type, teacher status, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements.

Attitudes has:

21. no relationship with school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements.

Behaviour Intentions has:

22. a low negative relationship with school size; and
23. no relationship with school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements.

Behaviour has:

24. low positive relationships with teacher status, teacher experience and use of Student Outcome Statements; and

25. no relationship with school size, school location, socio-economic status, department size, department type, sex, age and purpose of Student Outcome Statements.

These results support the conclusion that the teacher receptivity to Student Outcome Statements is related to teachers' beliefs about the change and, in particular, their attitudes and beliefs about its benefits and support and the comparison with the previous system. The teacher receptivity is related to teaching processes such as cohesiveness, collaboration and teacher learning opportunities, although these relationships are generally less strong than those between receptivity and teachers' beliefs. Factors associated with the schools, departments and teacher backgrounds do not appear to be strong factors influencing receptivity.

CHAPTER 7
DATA ANALYSIS: PART B
MULTIPLE REGRESSION ANALYSIS

Introduction

The model used in this study and the theoretical relationships suggested in Chapter three suggest a number of joint relationships between each of the dependent variables (Overall Feelings; Attitudes; Behaviour Intentions and Behaviour) and the two sets of independent variables; and between the dependent variables and the situation variables (school size, school location, socio-economic status, department size, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements). In this chapter, these relationships are summarised under the group one independent variables, the group two independent variables, the situation variables and, fourthly, all of the independent variables. Other joint relationships with the dependent variables and all the independent variables together are summarised under all independent variables.

The method used to test these joint relationships is multiple linear regression. From the appropriate regression equation, the beta weights can be used to compare the relative influence of each independent variable on the dependent variables. These beta weights remain constant irrespective of the order in which the independent variables are entered into the regression equation. They indicate how much the dependent variable changes (in standard deviations) when the independent variable changes by one standard deviation. Consistent with the model proposed, Overall Feelings, Attitudes, Behaviour Intentions, and Behaviour are each considered as separate and distinct aspects of teacher receptivity to change involving Student Outcome Statements. Each of these four aspects is thus used separately as a dependent variable in the regression equations.

The analyses were undertaken using SPSS for Windows Linear Regression. (For a discussion of regression refer to *Using Multivariate Statistics*, Tabachnick, B and Fidel, L, 1996 and *SPSS for Windows Base System User's Guide*, Norusis, M, 1994.)

Dependent Variables and the Group One Independent Variables

The multiple regression equation used to examine the joint relationship between the group one independent variables and the dependent variable, Overall Feelings, takes the following form:

$$Y = b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + R$$

Where:
Y = Overall Feelings
x_1= non-monetary cost benefits
b_1= regression weight for x_1
x_2= alleviation of fears and concerns
b_2 = regression weight for x_2
x_3 = significant other support
b_3 = regression weight for x_3
x_4 = feelings compared to the previous system
b_4 = regression weight for x_4
R = residual

Similar equations are used when Attitudes, Behaviour Intentions or Behaviour is the dependent variable, in place of Overall Feelings, and the same independent variables are used.

Multiple R in the equation for Overall Feelings is significant (R = 0.72, p <0.001) and the null hypothesis can be rejected. All the group one independent variables together, account for 52% of the variance in Overall Feelings. The most important independent variables are indicated by the beta weights in the regression equation (see Table 7.1). Tables 7.1, 7.2 and 7.3 all have a sample size of less than 100 and suggest that further research with larger numbers may lead to more meaningful results.

Table 7.1: Summary of multiple regression analysis between the dependent variables and the group one independent variables

Group One Independent Variables	Dependent Variables: Overall Feelings	Attitudes	Behaviour Intentions	Behaviour
Non-monetary cost benefits	β = 0.288	β = 0.362	β = 0.339	β = 0.269
Alleviation of fears & concerns	β = -0.289	β = -0.084	β = -0.055	β = -0.210
Significant other support	β = 0.361	β = 0.164	β = 0.247	β = 0.167
Feelings compared to the previous system	β = 0.422	β = 0.268	β = 0.314	β = 0.120
Variance accounted for	51.6%	46.5%	44.7%	13.7%
Significance	<0.001	<0.001	<0.001	<0.05
Multiple R	0.718	0.682	0.668	0.370
Average Tolerance	0.735	0.610	0.651	0.622

Notes:
1. β refers to the beta weight (standardised regression coefficient) in the multiple regression equation
2. n is in the range 67 to 84
3. Tolerance is the proportion of the variance of a variable not explained by the independent variables already in the equation. Zero indicates that an independent variable is a perfect linear combination of other independent variables and 1 indicates that the variable is uncorrelated with the other variables. Tolerance levels for this set of variables are all average to high indicating that there are no significant intercorrelations.

The numerical values for the standardised regression weights (beta weights), in order of importance in accounting for the variance, are: 0.422 for feelings compared to the previous system, 0.361 for significant other support, -0.289 for alleviation of fears and concerns and 0.288 for non-monetary cost benefits. These beta weights show that feelings compared to the previous system is the most important predictor of variability in Overall Feelings, followed by significant other support, alleviation of fears and concerns and non-monetary cost benefits. They indicate, for example, that when feelings compared to the previous system is increased by one standard deviation, Overall Feelings is increased by 0.422 standard deviations, and vice versa. This is as conceptualised in the model (see Figure 3.1). These independent variables are all positively related to Overall Feelings towards Student Outcome Statements except for the alleviation of fears and concerns variable which has a negative beta weight. The latter means that when alleviation of fears and concerns is increased by one standard deviation, Overall Feelings decreases by 0.289 standard deviations. This is an unexpected and unusual result. This can be explained if the variable acts as a suppressor. That is, the variable, alleviation of fears and concerns, enhances the importance of other independent variables by virtue of suppression of irrelevant variance in other independent variables or in the dependent variable. Although the beta weight is significant (p significant at <0.01), the correlation between this variable and Overall Feelings is close to zero.

Multiple R in the equation for Attitudes, as the dependent variable, is significant ($R = 0.68$, $p<0.001$) and the null hypothesis can be rejected. All the group one independent variables account for 46.5% of the variance in Attitudes. The most important independent variables are indicated by the beta weights in the regression equation (see Table 7.1). The numerical values for the standardised regression

weights (beta weights), in order of importance in accounting for the variance, are 0.362 for non-monetary cost benefits, 0.268 for feelings compared to the previous system, 0.164 for significant other support and -0.084 for alleviation of fears and concerns. They indicate, for example, that when non-monetary cost benefits are increased by one standard deviation, Attitudes are increased by 0.362 standard deviations and vice versa. This is as conceptualised in the model (see Figure 3.1) These are all positively related to Attitudes towards Student Outcome Statements, except for the alleviation of fears and concerns variable which has a negative beta weight. This result means that when the alleviation of fears and concerns is increased by one standard deviation, then Attitudes decreases by 0.084 standard deviations. This is not as conceptualised in the model. However, it does not make a significant contribution to the prediction of variance although the correlation with Attitudes is significant. The significance test only applies to the unique contribution made by the variable and it may be that the variable shares variance with another independent variable.

Multiple R in the equation for Behaviour Intentions as the dependent variable is significant ($R = 0.67$, $p<0.001$) and the null hypothesis can be rejected. All the group one independent variables account for 44.7% of the variance in Behaviour Intentions. The most important independent variables are indicated by the beta weights in the regression equation (see Table 7.1). The numerical values for the beta weights, in order of importance in accounting for the variance, are 0.339 for non-monetary cost benefits, 0.314 for feelings compared to the previous system, 0.247 for significant other support and -0.055 for alleviation of fears and concerns. They indicate, for example, that when non-monetary cost benefits are increased by one standard deviation, Behaviour Intentions increase by 0.339 standard deviations and vice versa. All the relationships are positively related to Behaviour Intentions, except for the alleviation of fears and concerns variable. This variable is significantly correlated with Behaviour Intentions but does not make a significant unique contribution to the prediction of variance.

Multiple R in the equation for Behaviour is significant ($R = 0.37$, $p<0.05$) and the null hypothesis can be rejected. All the group one independent variables account

for 13.7% of the variance in Behaviour. The most important independent variables are indicated by the beta weights in the regression equation (see Table 7.1). The numerical values for the beta weights, in order of importance in accounting for the variance, are 0.269 for non-monetary cost benefits, -0.210 for alleviation of fears and concerns, 0.167 for significant other support and 0.120 for feelings compared to the previous system. These results indicate, for example, that when non-monetary cost benefits are increased by one standard deviation, Behaviour increases by 0.269 standard deviations and vice versa. This is as conceptualised in the model. All the relationships are positively related to Behaviour, except for the alleviation of fears and concerns variable which has a negative beta weight. It probably acts as a suppressor variable. The relationship is not significantly correlated with Behaviour and does not make a significant contribution to prediction of the variance.

These results indicate that the group one independent variables account for a significant and large amount of variance in receptivity to Student Outcome Statements. This means that when the group one independent variables change, consistent with the model proposed, Overall Feelings, Attitudes, Behaviour Intentions, and Behaviour each change in correspondence. The two most important independent variables are Feelings compared to the previous system and non-monetary cost benefits. The group one independent variables account for about 45% of the variance in Overall Feelings, Attitudes and Behaviour Intentions and about 14% of the variance in Behaviour.

Dependent Variables and the Group Two Independent Variables

The multiple regression equation used to examine the joint relationship between the group two independent variables and the dependent variable, Overall Feelings, takes the following form:

$$Y = b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + R$$

Where:

Y = Overall Feelings towards the SOS
x_1 = shared teaching goals
b_1 = regression weight for x_1
x_2 = cohesiveness
b_2 = regression weight for x_2
x_3 = team teaching
b_3 = regression weight for x_3
x_4 = involvement in decision-making
b_4 = regression weight for x_4
x_5 = teacher collaboration
b_5 = regression weight for x_5
x_6 = teacher learning
b_6 = regression weight for x_6
R = residual

Similar equations are used when Attitudes, Behaviour Intentions or Behaviour is the dependent variable, in place of Overall Feelings, and the same independent variables are used.

In examining the equation for Overall Feelings, the multiple correlation R is not significant at 0.05. That is, the multiple correlation between the dependent variable and the independent variables is not significantly different from zero. Any observed correlation should be discounted, as it is strongly likely to be due to sampling fluctuations or measurement error.

Table 7.2: Summary of multiple regression analyses between the dependent variables and the group two independent variables

Group Two Independent Variables	Dependent Variables: Overall Feelings	Attitudes	Behaviour Intentions	Behaviour
Shared teaching goals	β = -0.051	β = 0.008	β = 0.005	β = -0.055
Cohesiveness	β = -0.275	β = 0.077	β = -0.195	β = -0.088
Team teaching	β = -0.144	β = -0.191	β = -0.067	β = -0.161
Involvement in decision-making	β = 0.317	β = 0.029	β = 0.425	β = 0.511
Teacher collaboration	β = -0.072	β = -0.059	β = -0.017	β = 0.193
Teacher learning	β = -0.201	β = 0.147	β = 0.081	β = -0.192
Variance accounted for	16.5%	8.5%	17.7%	31.4%
Significance	ns	ns	<0.05	<0.001
Multiple R	0.406	0.292	0.421	0.560
Average Tolerance	0.676	0.609	0.647	0.640

Notes:
1. β refers to the beta weight (standardised regression coefficient) in the multiple regression equation
2. n is in the range 74 to 105
3. ns means not significant at the 0.05 level.
4. Tolerance levels for this set of variables are all average to high.
5. ns= not significant

Multiple R in the equation for Attitudes is not significant and the null hypothesis cannot be rejected. That is, the multiple correlation between the dependent variable and the independent variables is not significantly different from zero.

Multiple R (0.421) in the equation for Behaviour Intentions is significant at 0.05 and the null hypothesis can be rejected. The numerical values for the beta weights, in order of importance in accounting for the variance, are involvement in decision-making 0.425, -0.195 for cohesiveness, 0.081 for teacher learning, -0.067 for team teaching,
-0.017 for teacher collaboration and 0.005 for shared teaching goals.

Altogether 17% of the variance in Behaviour Intentions was predicted by knowing scores for these independent variables. Three variables, team teaching, teacher collaboration and cohesiveness have negative beta weights. This means that if the independent variable increases by one standard deviation then the dependent variable decreases, and vice versa. This is not as conceptualised in the model, however, their correlations with Behaviour Intentions are not significant and their unique contributions to the variance are not significant. The negative beta weights may be explained by their acting as suppressor variables. That is, the variables, team teaching, teacher collaboration and cohesiveness, enhance the importance of other independent variables, such as involvement in decision making by virtue of suppression of irrelevant variance in other independent variables or in the dependent variable.

Multiple R (0.560) in the equation for Behaviour is significant and the null hypothesis can be rejected. The numerical values for the beta weights, in order of importance in accounting for the variance, are 0.511 for involvement in decision-making, 0.193 for teacher collaboration. Altogether 31% of the variance in Behaviour is predicted by knowing scores for these independent variables. Negative beta weights were recorded for four of the group two independent variables (-0.192 for teacher learning, -0.161 for team teaching, -0.088 for cohesiveness and –0.055 for shared teaching goals). This is not as conceptualised in the model. The four variables with negative beta weights are acting as suppressor variables. Their correlations with Behaviour are not significant and they do not make a significant unique contribution to the variance.

These results indicate that, while the group two independent variables do not account for a large amount of variance in predicting receptivity to Student Outcome Statements in terms of Overall Feelings and Attitudes, they do account for a significant and moderate amount of variance in relation to Behaviour Intentions and Behaviour. This means that when the group two independent variables change, consistent with the model proposed, Behaviour Intentions and Behaviour each change in correspondence. The group two independent variables account for 18% of the variance in Behaviour Intentions, and 31% in Behaviour.

Dependent Variables and the Situation Variables

The multiple regression equation used to examine the joint relationship between the situation variables and the dependent variable, Overall Feelings takes the following form:

$$Y = b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + b_{10}x_{10} + R$$

Where:
Y = Overall Feelings towards the SOS
x_1 = school size
b_1 = regression weight for x_1
x_2 = school location
b_2 = regression weight for x_2
x_3 = socio-economic status
b_3 = regression weight for x_3
x_4 = department size
b_4 = regression weight for x_4
x_5 = teacher status
b_5 = regression weight for x_5
x_6 = teacher experience
b_6 = regression weight for x_6
x_7 = sex
b_7 = regression weight for x_7
x_8 = age
b_8 = regression weight for x_8
x_9 = use of SOS
b_9 = regression weight for x_9
x_{10} = purpose of SOS
b_{10} = regression weight for x_{10}
R = residual

Similar equations are used to describe Attitudes, Behaviour Intentions and Behaviour.

Multiple regression analysis for each of the dependent variables with the situation variables indicates that multiple correlation R is not significant at 0.05. That is, there was no significant difference from a null hypothesis that all the multiple correlations between the dependent variables and the situation variables were zero. The amount of variance accounted for by the situation variables appears moderate (28% to 38%) but no meaning should be attached to these figures. The sample size is low (n = 33 to 47) and the individual correlations are very low. The

number of cases under consideration is limited due to missing responses on the situation variables. Because of the errors of estimating correlation with small samples, fewer than 100 cases may lead to solutions which are meaningless.

Table 7.3: Summary of multiple regression analyses between the dependent variables and the situation variables

Situation Variables	Dependent Variables: Overall Feelings	Attitudes	Behaviour Intentions	Behaviour
School size	β = 0.143	β = -0.625	β = -0.242	β = 0.202
Location	β = 0.535	β = -0.018	β = 0.181	β = 0.206
Socio-economic status	β = 0.221	β = 0.018	β = 0.190	β = 0.120
Department size	β = 0.113	β = 0.318	β = 0.327	β = 0.285
Teacher status	β = -0.238	β = 0.060	β = -0.258	β = -0.312
Teacher experience	β = 0.550	β = 0.140	β = 0.399	β = 0.276
Sex	β = 0.187	β = 0.016	β = 0.060	β = -0.039
Age	β = -0.261	β = -0.089	β = -0.125	β = -0.159
Use of SOS	β = 0.026	β = 0.143	β = 0.172	β = 0.123
Purpose of SOS	β = -0.307	β = 0.284	β = -0.029	β = -0.091
Variance accounted for	35.7%	30.0%	37.8%	27.6%
Significance	ns	ns	ns	ns
Multiple R	0.597	0.548	0.615	0.525
Average tolerance	0.601	0.557	0.579	0.568

Notes:
1. β refers to the beta weight (standardised regression coefficient) in the multiple regression equation
2. n is in the range 33 to 47
3. ns means not significant at the 0.05 level
4. The tolerance levels for this set of variables are average except for the variables teacher experience and teacher age which have low levels in regard to Attitudes, Behaviour Intentions and Behaviour. A relationship between teacher experience and age was expected
5. ns= not significant

Dependent Variables and all the Independent Variables and the Situation Variables

The multiple regression equation used to examine the joint relationship between all (group one and group two) independent variables and the dependent variable, Overall Feelings, takes the following form:

$$Y = b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 . b_8x_8 + b_9x_9 + b_{10}x_{10} + R$$

Where:
Y = Overall Feelings towards the SOS
x_1 = non-monetary cost benefits
b_1 = regression weight for x_1
x_2 = alleviation of fears and concerns
b_2 = regression weight for x_2
x_3 = significant other support
b_3 = regression weight for x_3
x_4 = feelings compared to the previous system
b_4 = regression weight for x_4
x_5 = shared teaching goals
b_5 = regression weight for x_5
x_6 = cohesiveness
b_6 = regression weight for x_6
x_7 = team teaching
b_7 = regression weight for x_7
x_8 = involvement in decision-making
b_8 = regression weight for x_8
x_9 = teacher collaboration
b_9 = regression weight for x_9
x_{10} = teacher learning
b_{10} = regression weight for x_{10}
R = residual

Similar equations are used to describe Attitudes, Behaviour Intentions and Behaviour. The situation variables are not included in the equations because they were not found to make a significant difference for any of the dependent variables.

In Table 7.4, multiple R (0.770) in the equation for Overall Feelings is significant at the 0.001 level and the null hypothesis can be rejected. Feelings compared to the previous system, significant other support, non-monetary cost benefits and alleviation made a significant contribution to the regression equation with feelings compared to previous system and significant other support significant at 0.005, non-monetary cost benefits at 0.01 and alleviation of fears and concerns significant at 0.05.

The numerical values for the beta weights, in order of importance in accounting for the variance are 0.385 for feelings compared to the previous system, 0.355 for non-monetary cost benefits, 0.343 for significant other support, -0.287 for alleviation of fears and concerns (see Table 7.4). These give an indication of the relative importance of these independent variables in their relationship with the dependent variable, Overall Feelings. Altogether, with the addition of the group two variables, 59% of the variance in Overall Feelings was predicted by knowing scores on these independent variables. The addition of the group two independent variables added 8% to the variance accounted for by the group one variables. Alleviation of fears and concerns has a negative beta weight of 0.287; however, the correlation with Overall Feelings is not significant, suggesting that the variable is acting as a suppressor variable.

Multiple R (0.698) in the equation for Attitudes is significant ($p<0.001$) and the null hypothesis can be rejected. Feelings compared to previous system, non-monetary cost benefits and significant other support made a low to moderate positive contribution to the variance in Attitudes. Non-monetary cost benefits, feelings compared to previous system, cost benefits and significant other support are the most important variables. The numerical values for the beta weights, in order of importance in accounting for the variance are 0.339 for non-monetary cost

benefits, 0.291 for feelings compared to the previous system, 0.237 for significant other support and -0.215 for involvement in decision-making (see Table 7.4). Four of the beta weights are negative but only involvement in decision making makes a significant contribution to the variance. This variable does not correlate significantly with Behaviour and is acting as a suppressor variable. Altogether 49% of the variance in Attitude was predicted by knowing scores on these independent variables. The addition of the group two independent variables added only 2% to the variability accounted for by the group one variables.

Table 7.4: Summary of multiple regression analyses between the dependent variables and all the independent variables

All the Independent Variables	Dependent Variables			
	Overall Feelings	Attitudes	Behaviour Intentions	Behaviour
Non-monetary cost benefits	β = 0.355	β = 0.339	β = 0.341	β = 0.264
Alleviation of fears and concerns	β = -0.287	β = 0.100	β = -0.110	β = -0.327
Significant other support	β = 0.343	β = 0.237	β = 0.236	β = 0.008
Feelings compared to the previous system	β = 0.385	β = 0.291	β = 0.327	β = 0.057
Shared teaching goals	β = -0.167	β = -0.015	β = 0.062	β = 0.031
Cohesiveness	β = 0.123	β = 0.111	β = 0.051	β = -0.026
Team teaching	β = -0.006	β = -0.054	β = 0.055	β = -0.208
Involvement in decision-making	β = 0.081	β = -0.215	β = 0.192	β = 0.437
Teacher collaboration	β = 0.001	β = 0.005	β = 0.021	β = 0.137
Teacher learning	β = -0.025	β = -0.053	β= -0.179	β = -0.131
Variance accounted for	59.3%	48.7%	50.4%	39.7%
Significance	<0.001	<0.001	<0.001	<0.001
Multiple R	0.770	0.698	0.710	0.630
Average Tolerance	0.566	0.563	0.548	0.567

Notes:
1. β refers to the beta weight (standardised regression coefficient) in the multiple regression equation
2. n is in the range 60 to 76
3. The tolerance levels for this set of variables are all average.

Multiple R (0.709) in the equation for Behaviour Intentions is significant and the null hypothesis can be rejected. Non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to previous system, made a significant contribution to the regression equation ($p<0.001$). The numerical values for the beta weights, in order of importance in accounting for the variance are: 0.341 for non-monetary cost benefits, 0.327 for feelings compared to the previous system and 0.236 for significant other support. Altogether, 50% of the variance in Behaviour Intentions was predicted by knowing scores on these independent variables. The addition of the group two variables added 5% to the variance accounted for by the group one variables.

Multiple R (0.630) in the equation for Behaviour was significant ($p<0.001$) and the null hypothesis can be rejected. Involvement in decision-making and alleviation of fears and concerns made a significant contribution to the regression equation ($p<0.001$). The numerical values for the beta weights, in order of importance in accounting for the variance are 0.437 for involvement in decision-making, -0.327 for alleviation of fears and concerns, 0.264 for non-monetary cost benefits, -0.208 for team teaching (see Table 7.4). Altogether 40% of the variability in Behaviour was predicted by knowing scores on these independent variables, (group one and group two together) and the addition of the group two independent variables added 26% to the prediction of variance. Alleviation of fears and concerns has a negative but statistically significant beta weight. This variable does not correlate significantly with Behaviour and is acting as a suppressor variable.

Summary

The multiple regression analysis provides strong support for the general model of teacher receptivity used in this study. The general model uses four aspects of receptivity (Overall Feelings, Attitudes, Behaviour Intentions and Behaviour) and two sets of independent variables (group one and group two). The conclusions relating to teacher receptivity to the change to Student Outcome Statements are presented in four different sections since the pattern of relationships differs for the four dependent variables. The situation variables as a group do not appear to contribute significantly to the relationships. However, the size of the sample available for this analysis was reduced and further consideration could be given to these variables with a larger initial sample.

Overall Feelings

The group one independent variables (non-monetary cost benefit, alleviation of fears and concerns, significant other support and feelings compared to the previous system) accounted for 52% of the variance in Overall Feelings. Each of the independent variables made a contribution to the prediction of variance, as conceptualised in the model. Alleviation of fears and concerns is inversely related

to Overall Feelings while all the other variables are positively related to Overall Feelings.

The group two independent variables (shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities) did not make a significant contribution to the prediction of variance in Overall Feelings.

Combined with the group one independent variables, the group two variables added 8% to the prediction of variance in Overall Feelings. The group one and group two variables together accounted for 59% of the variance in Overall Feelings. However, in the joint analysis, only the four group one variables made a significant unique contribution to the variance in Overall Feelings.

Attitudes

Group one independent variables (non-monetary cost benefit, alleviation of fears and concerns, significant other support and feelings compared to the previous system) contributed 47% of the variance in Attitudes, with a significant unique contribution being made by non-monetary cost benefits and feelings compared to the previous system as conceptualised in the model. Alleviation of fears and concerns is inversely related to Attitudes while all the other variables are positively related to Attitudes.

The group two independent variables (shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities) alone did not make a significant contribution to prediction of Attitudes.

Combined with the group one independent variables, the group two independent variables added only 2% to the prediction of Attitudes. In the joint analysis, non-monetary cost benefits, significant other support and feelings compared to the previous system made a significant unique contribution to the prediction of

Attitudes. All the group one and group two variables accounted for 48.7% of the variance in Attitudes.

Behaviour Intentions

The group one independent variables accounted for 45% of the variance in Behaviour Intentions. Non-monetary cost benefits, significant other support and feelings compared to the previous system each made a significant unique contribution to the prediction as conceptualised in the model. The group one independent variables accounted for 44.7% of the variance in Behaviour Intentions.

The group two independent variables alone accounted for 18% of the variation in Behaviour Intentions, with a significant positive and unique contribution being made by involvement in decision-making.

The group one and group two independent variables together accounted for 50% of the variance in Behaviour Intentions. Therefore, the addition of the group two variables added 5% to the prediction of Behaviour Intentions. All the group one variables were related positively to Behaviour Intentions as conceptualised, except for alleviation of fears and concerns which was inversely related

Behaviour

Although the contribution was statistically significant, the group one independent variables contributed only 14% to prediction of variance in Behaviour. Non-monetary cost benefits had a low positive relationship with Behaviour and alleviation of fears and concerns was inversely related.

The group two independent variables contributed 31% to the prediction of Behaviour. Involvement in decision-making had a low positive relationship with Behaviour, as did teacher collaboration. Teacher learning opportunities, team teaching, cohesiveness and shared teaching goals had inverse relationships.

Together with the group one variables, the group two variables contributed 40% to the prediction of variability in Behaviour, adding 26% to the variance predicted by the four group one variables alone. Only alleviation of fears and concerns and involvement in decision-making made a contribution to the prediction.

In overall terms, the group one independent variables contribute significantly to the prediction of Overall Feelings, Attitudes and Behaviour Intentions, but are not as important in the prediction of Behaviour. Three of the group one variables, non-monetary cost benefit, significant other support and feelings compared to the previous system, have a moderate to low positive relationship with the dependent variables, while alleviation of fears and concerns has a low negative relationship with the dependent variables.

The group two independent variables (shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities) are not as strong as the group one independent variables as predictors of the dependent variables except in regard to Behaviour. Only one of the group two variables (involvement in decision-making) has a moderate to low positive relationship with the dependent variables.

The situation variables do not appear to contribute to prediction of variance in Overall Feelings, Attitudes, Behaviour Intentions or Behaviour.

Therefore, the group one independent variables appear to be the best predictors of Overall Feelings, Attitudes and Behaviour Intentions. However, the group two variables are better predictors of Behaviour. For all dependent variables, better predictions can be made by combining group one and group two independent variables, however, this adds only 2% to 7% to the variance predicted by group one alone, except in the case of Behaviour where 26% is added.

CHAPTER 8
SUMMARY, CONCLUSIONS AND IMPLICATIONS

This chapter provides a summary of the study and brings together the main conclusions. The practical and research implications of the main findings relating to teacher receptivity towards Student Outcome Statements and the main variables affecting teacher receptivity to this system-wide change in Western Australian government secondary schools are discussed.

Studies by Waugh and Godfrey (1995, 1993) and by Waugh (1994) and Waugh and Punch (1987, 1985) into teachers' receptivity to system-wide educational change examined the literature on planned educational changes which suggested that "when successful", planned educational changes "have a life cycle that can be divided into three stages, initiation, implementation and routinization. Initiation refers to the processes and planning which lead up to and include the decision to proceed with the change... Implementation refers to the first use of the change on a system-wide basis in the classroom... and routinization refers to whether the change becomes an ongoing part of the system" (Waugh & Godfrey, 1995, p.39).

The present study deals with the end of the initiation stage and the beginning of the implementation stage. Waugh and Godfrey (1995, p.50) suggest that "during the initiation stage, administrators should sell the change to the teachers in terms of the general variables related to receptivity in the implementation stage". They developed a model which was based on previous research and literature on system-level change and identified six critical variables: non-monetary cost benefits, practicality in the classroom, alleviation of fears and concerns, teacher participation in decision-making, significant other support and feelings compared to the previous system. The model that provides the theoretical framework for this study has been developed by combining and utilising variables from recent research on change (Rosenholtz, 1991; Fullan & Hargreaves 1991; Hargreaves,

Davis, Fullan, Wignall, Stager & Macmillan, 1991; McLaughlin, 1990, 1987; Waugh & Godfrey, 1995, 1993; Waugh & Punch, 1987, 1985).

There are many factors that influence how teachers may react to changes generated by an education system, or how employees of any organisation react to and manage change. It would require a complex process to analyse all the relationships between variables that may influence teachers' receptivity and actions towards change. In order to simplify the problem, a model has been developed which describes the perceived most important relationships between the variables. Although the creation of a model may be seen as somewhat artificial, it serves as a useful tool, in a study such as this, to show the main variables of interest and how they may be related.

SUMMARY

The study has three aims in line with the model that is used in this research:

1. To investigate teachers' receptivity to the use of Student Outcome Statements in Western Australian, government, secondary schools. Receptivity is defined in four aspects, overall feelings, attitudes, behaviour intentions and behaviour.
2. To investigate the relationships between receptivity, as the dependent variable and ten independent variables: non-monetary cost benefit, alleviation of fears and concerns, perceived support from senior staff, feelings compared to the previous system, shared goals (shared teaching goals and cohesiveness, collaboration (team teaching, involvement in decision-making teacher collaboration) and teacher learning opportunities.
3. To investigate the relationships between receptivity and the independent variables in the context of the situation variables related to the school, department and teacher.

Teachers from government secondary schools were surveyed through a questionnaire that was developed using previous instruments. There were 126 valid responses to the questionnaire from 30 different government schools across Western Australia including about half from country schools and half from

metropolitan schools. The questionnaire was trialed using 15 secondary curriculum consultants who had extensive experience working in secondary schools with teachers who were using the Student Outcome Statements. The original questionnaire was modified according to the feedback received from the trial and as a result the questionnaire was reduced from 160 items to 129 items. After the editing, the questionnaire could be completed in twenty to twenty-five minutes. Seven experienced secondary principals were asked to provide further feedback on the questionnaire and further improvements were made to ensure that the language was appropriate and friendly. An open-ended section was designed to add a deeper qualitative dimension to the study by allowing teachers to express themselves in their own words and to state how the system could be improved to produce better outcomes and to manage the change better. The feedback suggested that more space would be required and this modification was incorporated into the final version of the questionnaire.

The sample attracted a younger group of teachers than the average state age of 42 (Education Department, 1999) with over sixty percent of the respondents being below the age of forty. Some twenty-eight per cent were aged between 41 and 50 and approximately the same number were aged between 20 and 30. Overall the group was aged between 20 and over 61 years.

The model that provides the theoretical framework for this study has been developed by combining and utilising variables from recent research on change. There are two groups of independent variables and the situation variables. The first group of independent variables are a selection taken from the studies done by Waugh and Godfrey (1995, 1993) and Waugh and Punch (1987,1985): non-monetary cost benefit, alleviation of fears and concerns, perceived support from senior staff, feelings compared to the previous system. The inclusion of the second group of independent variables is an attempt to build on the previous model and the second group is a selection taken from the work of Rosenholtz (1991) and Hargreaves, Davis, Fullan, Wignall, Stager and Macmillan (1991): shared goals (shared teaching goals and cohesiveness), collaboration (team teaching,

involvement in decision-making and teacher collaboration) and teacher learning. The situation variables relate to the school (socio-economic status, size and rural or city), department (type and size) and teacher (age, experience, status, gender, decision to participate in the change, use of Student Outcome Statements and purposes of Student Outcome Statements).

The dependent variable, teacher receptivity towards Student Outcome Statements, involves teachers' beliefs, attitudes, behaviour intentions and behaviour, as they have developed while using the Student Outcome Statements. These have been chosen because previous research support their inclusion. Behaviour is added to extend the model and bring all these variables together in one study. Teacher receptivity to Student Outcome Statements is expected to be related to many variables in a complex way, as there are many factors which influence how teachers may react to changes generated by an education system. The model created in this study, serves as a useful tool to show the main variables of interest and how they may be related. This general model of teacher receptivity to change illustrates the relationships between the most important variables influencing the receptivity of teachers in government secondary schools to a system-wide planned educational change, the use of Student Outcome Statements.

Teachers' receptivity to Student Outcome Statements, measured in four aspects, is expected to be related to the sequence of overall feelings, attitudes, behaviour intentions and behaviour (Ajzen, 1989). The model suggests a correlation between the components of the dependent variable, teacher receptivity to change: overall feelings, attitudes, behaviour intentions and behaviour. In particular, it suggests that overall feelings influence attitudes that, in turn, influence intentions and behaviour.

The variables in the model are measured using statements on a four point Likert Scale (for example, from strongly agree to strongly disagree). The study also incorporates the use of the Rasch Measurement Model, which is a more recent development in the measurement of latent variables with such tools as Likert and

Semantic Differential Scales. The model creates a scale at interval measurement level based on the log odds of respondents agreeing with the items. The consistency of the teachers' responses are checked and the scale score needed for fifty percent chance of passing from one response category to the next is calculated. The scale scores are called threshold values. They are calculated in logits and they must be ordered to represent the increasing receptivity needed to answer from each response category to the next one. Items whose thresholds are not ordered are not considered to fit the measurement model and are discarded.

The development of the Student Outcome Statements emerged from the policy direction, which was launched after the release by the Education Department of a document called *Better Schools in Western Australia* in 1987. This direction, combined with the fact that processes were being developed to work on national collaborative curriculum projects, provided the impetus for this development. A decision was taken by the Education Department in 1990 to develop eight sets of student outcomes, that would be mandated by the system and delivered at the school level. These student outcomes apply to the compulsory years of schooling in Western Australian, government schools. In the next few years, this commitment was reinforced by the completion of a set of policies and guidelines, on school planning, decision-making, financial management and accountability. By mid 1993, the National Statements and Profiles were completed in draft form ready for endorsement by the Australian Education Council. In Western Australia, a decision was made to develop the Student Outcome Statements, based on these National Statements and Profiles.

CONCLUSIONS

The conclusions are set out in three parts that correspond to the aims and the model used in the study. Part 1 provides a preliminary and qualitative summary of conclusions. Part 2 provides the conclusions from the zero-order correlations. Part 3 provides the conclusions from the multiple regression analysis.

Part 1: Conclusions from the preliminary analysis

The preliminary analysis of the data, which is essentially qualitative in nature, suggests that teachers were generally positive about their experiences using the Student Outcomes Statements. Just over 91 percent of the teachers stated that they support the use of Student Outcome Statements. They felt that the Student Outcome Statements were valuable (86.5%), liberating (76.1%) effective (71.8%) and necessary (68.3%). However, they also felt that the Student Outcome Statements were complicated (63.5%), time inefficient (54.7%) and unclear (53.2%). This feedback was consistent with the feedback from the Education Department's trial, which suggested that the Student Outcome Statements needed refinement, an initiative that was undertaken throughout the years of 1996 to 1998. It also suggests that perhaps the Student Outcome Statements may well become clearer and more time efficient as teachers become more familiar with their content and their use.

The most significant reason for using the Student Outcome Statements was for the purpose of monitoring student achievement (96%), followed by planning teaching and learning programs (91%) and collecting student assessment information (84%). Over half of the teachers (64%) were using the Student Outcome Statements with all of their lower school classes. Just over ninety percent of teachers reported that they will probably say that Student Outcome Statements are useful for monitoring student achievement; for planning teaching and learning programs; and for school development planning. Seventy-three percent indicated they would probably say that Student Outcome Statements are useful for reporting student achievement to parents

The behaviours of the respondents in terms of attendance at Student Outcome Statement professional development sessions, sharing knowledge with colleagues and generally voicing support for Student Outcome Statements were supportive and positive. Teachers felt that in weighing up the balance between any extra work generated by using Student Outcome Statements and their satisfaction with teaching, the use of Student Outcome Statements was worthwhile (81%). The

extra work was beneficial for better student classroom learning (80.2%) but not as strong for student assessment (67%).

Teachers were positive about the opportunity to alleviate their fears and concerns with eighty-eight percent reporting that there was at least one school person with whom they can talk about any student problems associated with Student Outcome Statements. Teachers' feelings towards the use of Student Outcome Statements compared to their feelings about the Unit Curriculum (the previous system) were generally positive. In particular, they agreed that Student Outcome Statements were better than the Unit Curriculum in facilitating judgement about student learning achievement (80.1%).

There was a high level of agreement of shared goals at the department level, including agreement on outcomes that students should be achieving. Teachers also reported a high level of school-wide commitment to student learning. At the department level, the respondents reported that most teachers within the department and the Head of Department or Teacher-in-Charge of the Subject have similar values and philosophies of education.

There were marked contrasts between the department and school items dealing with cohesiveness and, as expected, they showed more cohesion at the department level than throughout the school. The level of involvement in decision-making of teachers was very high in departments and not as high across the whole school. In their departments, teacher collaboration was high. Across the school, the level of teacher collaboration was high, but not as high as in departments. Both the department and the whole school were seen to strongly facilitate opportunities for teachers to learn new things.

A statistically significant relationship was shown to exist between the dependent variable, overall feelings, and the group one independent variable, feelings compared with the previous system. A similar relationship was shown to exist for behaviour intentions. In both cases the trend was in the same direction –

teachers who have positive feelings towards Student Outcome Statements and who have positive intentions in their regard, are likely to be receptive towards the change.

Teachers who have positive feelings towards Student Outcome Statements compared with the previous system are also likely to have positive attitudes. This is confirmed by the finding that the teachers who believe the benefits of the new system outweigh the problems, are supportive in terms of their attitudes towards the change. Teachers' behavioural intentions are directly related to their involvement in decision-making. A more positive attitude towards student Outcome Statements occurs as teachers age.

The model of teacher receptivity towards the introduction of Student Outcome Statements suggests a number of bivariate relationships between the group one and group two independent variables and receptivity and between the situation variables and receptivity. These relationships were tested and the following conclusions are set out in three sections. The first deals with the relationship between the dependent variables and group one independent variables, the second deals with the dependent variables and group two independent variables and the third with the dependent variable and situation variables.

Part 2: Conclusions from the zero-order correlations

Correlations between the dependent variables and the group one independent variables

Overall Feelings has:

1. a moderate positive relationship with non-monetary cost benefits, significant other support and feelings compared to the previous system; and
2. no relationship with alleviation of fears and concerns.

Attitudes has:

3. moderate positive relationships with non-monetary cost benefits, alleviation of fears and concerns, significant other support and feelings compared to the previous system.

Behaviour Intentions has:

4. moderate positive relationships with non-monetary cost benefits, significant other support and feelings compared to the previous system; and

5. a low positive relationship with alleviation of fears and concerns.

Behaviour has:

6. a low positive relationship with non-monetary cost benefits and feelings compared to the previous system; and

7. no relationship with alleviation of fears and concerns and significant other support.

Correlations between the dependent variables and the group two independent variables

Overall Feelings has:

8. a low positive relationship with involvement in decision-making; and

9. no relationship with shared teaching goals, cohesiveness, team teaching, teacher collaboration and teacher learning opportunities.

Attitudes has:

10. low positive relationships with cohesiveness, involvement in decision-making and teacher learning opportunities;

11. a low negative relationship with team teaching; and

12. no relationship with shared teaching goals and teacher collaboration.

Behaviour Intentions has:

13. low positive relationships with involvement in decision-making, teacher collaboration and teacher learning opportunities; and

14. no relationship with shared teaching goals, cohesiveness and team teaching;

Behaviour has:

15. a moderate positive relationship with involvement in decision-making;

16. a low positive relationship with teacher collaboration; and

17. a negative relationship with team teaching; and

18. no relationship with shared teaching goals, cohesiveness and teacher learning opportunities;

Correlations between the dependent variables and the situation variables

Overall Feelings has:

19. a low positive relationship with teacher experience; and

20. no relationship with school size, school location, socio-economic status, department size, department type, teacher status, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements.

Attitudes has:

21. no relationship with school size, school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements

Behaviour Intentions has:

22 .a low negative relationship with school size; and

23. no relationship with school location, socio-economic status, department size, department type, teacher status, teacher experience, sex, age, use of Student Outcome Statements and purpose of Student Outcome Statements.

Behaviour has:

24. low positive relationships with teacher status, teacher experience and use of Student Outcome Statements; and

25. no relationship with school size, school location, socio-economic status, department size, department type, sex, age and purpose of Student Outcome Statements.

Part 3: Conclusions from the Multiple Regression Analysis

The multiple regression analysis provides strong support for the general model of teacher receptivity used in this study. The general model used four aspects of receptivity (Overall Feelings, Attitudes, Behaviour Intentions and Behaviour) and two sets of independent variables (group one and group two). The conclusions relating to teacher receptivity to the change to Student Outcome Statements are presented in four different sections since the pattern of relationships differs for the four dependent variables. The situation variables as a group do not appear to contribute significantly to the relationships. However, the size of the sample available for these analyses was reduced and further consideration could be given to these variables with a larger initial sample.

Overall Feelings

The group one independent variables (non-monetary cost benefit, alleviation of fears and concerns, significant other support and feelings compared to the previous system) accounted for 52% of the variance in Overall Feelings. Each of the independent variables made a significant unique contribution to the prediction of variance, as conceptualised in the model. Alleviation of fears and concerns is inversely related to Overall Feelings while all the other variables are positively related to Overall Feelings.

The group two independent variables (shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities) did not make a significant contribution to the prediction of variance in Overall Feelings.

Combined with the group one independent variables, the group two independent variables added 8% to the prediction of variance in Overall Feelings. The group one and group two independent variables together accounted for 59% of the variance in Overall Feelings with the four group one independent variables accounting for most of this variance.

Attitudes

Group one independent variables (non-monetary cost benefit, alleviation of fears and concerns, significant other support and feelings compared to the previous system) contributed 47% of the variance in Attitudes, with a significant unique contribution being made by non-monetary cost benefits and feelings compared to the previous system as conceptualised in the model. Alleviation of fears and concerns is inversely related to Attitudes while all the other variables are positively related to Attitudes.

The group two independent variables (shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities) alone did not make a significant contribution to prediction of Attitudes.

Combined with the group one independent variables, the group two independent variables added only 2% to the prediction of Attitudes. In the joint analysis, non-monetary cost benefits, significant other support and feelings compared to the previous system made a significant unique contribution to the prediction of Attitudes. All the group one and group two variables accounted for 48.7% of the variance in Attitudes.

Behaviour Intentions

The group one independent variables accounted for 45% of the variance in Behaviour Intentions. Non-monetary cost benefits, significant other support and feelings compared to the previous system each made a significant unique contribution to the prediction as conceptualised in the model. The group one

independent variables accounted for 44.7% of the variance in Behaviour Intentions.

The group two independent variables accounted for 18% of the variation in Behaviour Intentions, with a significant positive and unique contribution being made by involvement in decision-making.

The group one and group two independent variables together accounted for 50% of the variance in Behaviour Intentions. Therefore, the addition of the group two variables added 5% to the prediction of Behaviour Intentions. All the group one independent variables were related positively to Behaviour Intentions as conceptualised, except for alleviation of fears and concerns which was inversely related.

Behaviour

Although the contribution was statistically significant, the group one independent variables contributed only 14% to prediction of variance in Behaviour. Non-monetary cost benefits had a low positive relationship with Behaviour and alleviation of fears and concerns was inversely related.

The group two independent variables contributed 31% to the prediction of Behaviour. Involvement in decision-making had a low positive relationship with Behaviour, as did teacher collaboration. Teacher learning opportunities, team teaching, cohesiveness and shared teaching goals had inverse relationships.

Together with the group one independent variables, the group two independent variables contributed 40% to the prediction of variability in Behaviour, adding 26% to the variance predicted by the four group one variables alone. Only alleviation of fears and concerns and involvement in decision-making made a significant unique contribution to the prediction.

In overall terms, the group one independent variables contribute significantly to the prediction of Overall Feelings, Attitudes and Behaviour Intentions, but are not as important in the prediction of Behaviour. Three of the group one independent variables, non-monetary cost benefit, significant other support and feelings compared to the previous system, have a moderate to low positive relationship with the dependent variables, while alleviation of fears and concerns has a low negative relationship with the dependent variables.

The group two independent variables (shared teaching goals, cohesiveness, team teaching, involvement in decision-making, teacher collaboration and teacher learning opportunities) are not as strong as the group one independent variables as predictors of the dependent variables except in regard to Behaviour. Only one of the group two independent variables (involvement in decision-making) has a moderate to low positive relationship with the dependent variables.

The situation variables do not appear to contribute to prediction of variance in Overall Feelings, Attitudes, Behaviour Intentions or Behaviour.

Therefore, the group one independent variables appear to be the best predictors of Overall Feelings, Attitudes and Behaviour Intentions. However, the group two variables are better predictors of Behaviour. For all dependent variables, better predictions can be made by combining group one and group two independent variables, however, this adds only 2% to 7% to the variance predicted by group one alone, except in the case of Behaviour where 26% is added.

These results support the conclusion that the teacher receptivity to Student Outcome Statements is related to teachers' beliefs about the change and, in particular, their attitudes and beliefs about its benefits and support and the comparison with the previous system. The teacher receptivity is related to teaching processes such as cohesiveness, collaboration and teacher learning opportunities, although these relationships are generally less strong than those between receptivity and teachers' beliefs. Factors associated with the schools,

departments and teacher backgrounds do not appear to be strong factors influencing receptivity.

The model of teacher receptivity towards the introduction of Student Outcome Statements suggests a number of bivariate relationships between the group one and group two independent variables and receptivity and between the situation variables and receptivity. Moderate to strong correlations/relationships were shown to exist between the group one independent variables and three aspects of receptivity: feelings, attitudes and behaviour intentions. On the whole, the group one independent variables are less strongly correlated with behaviour than with the other three dependent variables, presumably because there are other factors that influence teachers' actual behaviour, despite their beliefs, attitudes and intentions.

The major predictor indicated by correlations between the group two independent variables and the dependent variables is involvement in decision-making as a predictor of behaviour. Thus, involvement in decision-making may be one of the factors influencing teachers' actual behaviour, regardless of their feelings or attitudes, as noted in the discussion relating to the group one independent variables. The moderate strong correlation with behaviour intentions provides support for this suggestion.

The only significant correlations between the dependent variables and the situation variables were between years of teaching experience and feelings; gender and feelings; age and intentions; and years of teaching experience and behaviour, but they are of no practical significance because they explain less than five per cent of the variance.

IMPLICATIONS

The implications are set out in four parts. Part 1 discusses the implications for Central Office, Administrators and principals in terms of implementing the change for Student Outcome Statements. Part 2 discusses the implications for implementing system-wide major educational changes in general. Part 3 discusses

the implications for teachers and Part 4 discusses the implications for further research on system-wide educational change in a centralised system.

Part 1: Implications for administrators in implementing Student Outcome Statements

The findings in this study support previous research on system-wide changes in Western Australia, which suggest that a key success indicator for the implementation of these changes is teacher receptivity. Where teacher receptivity is high, teachers commit to implementation of the change and remain happy in their jobs. Waugh (1994) summarises the three main characteristics of previous changes that were successfully implemented in Western Australia. One, a long lead-in time and opportunities for discussion preceded the implementation process. Two, there was strong commitment by administrators to the change and, three, there was strong and positive teacher receptivity to the change. The factors influencing teacher receptivity such as non-monetary cost benefits, alleviation of fears and concerns, significant other support, feelings compared to the previous system, shared teaching goals, cohesiveness, team teaching, decision-making, teacher collaboration and teacher learning opportunities, as discussed in this study, are indicators which can provide a focus for administrators to maximise the positive impacts of change. Opportunities may be taken by administrators to provide professional development in these areas, to develop structural changes that enhance these positive indicators and to take these factors into consideration in their school decision-making processes.

In regard to the first characteristic relating to the change to Student Outcome Statements, a long lead-in time involving considerable effort, resources and expertise were invested in a two year trial to improve teacher awareness and to incorporate the feedback from the teachers into the implementation strategy. A comprehensive consultative process was initiated with teachers and administrators from schools during the period of the refinement of the Student Outcome Statements which further developed awareness and highlighted the benefits for teachers and the successes they could achieve in meeting the needs of their

students. This process of voluntary implementation of the Student Outcome Statements at an earlier stage in some schools assisted in providing knowledge and experience that other schools were then able to use to find solutions.

The implementation of the *Curriculum Framework* and the Student Outcome Statements has a five year lead-in time for implementation. This has provided schools with an additional five years to implement the now mandated Student Outcome Statements in Western Australia. Resources have been provided to schools and districts for professional development, which can target areas of need for teachers in order to develop knowledge and skills, and support is being provided for structural changes through the Local Area Education Planning process. This supports the second main characteristic of successful change, which is strong commitment by the administrators, in this case the Senior Executive of the Education Department. A decision was also taken by Senior Executive to focus on school leaders as the key personnel in the process of implementation. The responsibility would rest with the principals of schools to develop collaborative processes that would engage their teachers and ensure that they were involved in meaningful decision-making. The approach was supported through the provision of resources to schools for the professional development of staff and teams of curriculum officers were appointed to support the schools.

The third main characteristic of successful change, which is the main focus of the present study, relates to teacher receptivity to Student Outcome Statements. The findings in this study suggest that principals will have greater success in implementing the Student Outcome Statements if they maximise those factors in their schools that contribute most to teacher receptivity. The moderate positive relationship with Overall Feelings, Attitudes and Behaviour Intentions and non-monetary cost benefits, significant other support and feelings compared to the previous system provides a guide to the strategies that might be employed. It would be advisable to reassure teachers about the benefits of the change by providing them with time to reflect and be involved in professional development such as visits to other schools that have been part of the trial. It would be helpful

to demonstrate support by ensuring that significant educators within the school are providing leadership to classroom teachers and that messages of support are reinforced throughout the system. This can be achieved by appointing Deputy Principals, Heads of Department or key teachers as co-ordinators of various aspects of the change. In addition, there are moderate positive relationships between Attitudes and alleviation of fears and concerns. It would therefore be advisable for principals to ensure that support systems are in place so teachers can discuss concerns, can access information and solve problems that concern teachers.

Non-monetary cost benefits of Student Outcome Statements for teachers were measured by asking teachers to weigh up the balance between any extra work generated for them by Student Outcome Statements, satisfaction with teaching, their home life and better student classroom learning. They were asked to weigh up the balance between the total problems for them and the total benefits for the students and to weigh up the balance between any extra responsibility for student assessment and their workload. It is important that principals provide an environment where teachers feel that on balance the use of Student Outcome Statements is worthwhile for them. The alleviation of fears and concerns can be achieved by providing regular school meetings at which teachers can raise concerns about Student Outcome Statements. It is important to ensure that senior people are available to provide advice at the school for teachers who may have a problem with Student Outcome Statements and it is helpful for teachers to feel that there is good general school support whenever they have problems with the implementation of Student Outcome Statements in the classroom. Significant other support for Student Outcome Statements needs to be given by the principal, deputy principals, senior teachers, other teachers and colleagues. Teachers need to feel that these other people support the implementation process. An important element is that teachers need to feel that the use of Student Outcome Statements in comparison to the Unit Curriculum will provide for better student learning, more relevant content and more varied experiences for the students. They need to feel that they can manage their classrooms better, address the needs of individual

students better, make better judgement about student learning achievement and plan more relevant learning experiences for their students.

As there is a moderate positive relationship between involvement in decision-making and Behaviour and a low positive relationship between involvement in decision-making and the other three aspects of receptivity, it is advisable for principals to ensure that opportunities exist in the school for teachers to be involved in making decisions about the change. The preliminary qualitative data analysis suggests that, whilst the level of involvement in such decisions as the content of professional development teachers might undertake and the use of Student Outcome Statements was high at the department level, there was much less involvement in these decisions at the whole school level. Principals need to focus on whole school processes to raise this involvement and at the same time continue to empower and support Heads of Department and Teacher-in charge of subjects to continue to provide opportunities at the department level. In order to maximise the involvement of teachers in decision-making, it is helpful if they participate in selecting instructional material and resources and participate in determining appropriate instructional methods. It is critical that processes are developed where they can be involved in making decisions regarding the implementation of Student Outcome Statements. Teachers need to be presented with a variety of learning opportunities. They need to be encouraged to try out new ideas and they need to have a senior person assisting them to improve their skills. The professional development opportunities need to be such that teachers will be motivated to implement the new ideas presented.

Low positive relationships exist between cohesiveness and Attitudes, and between teacher collaboration and Behaviour Intentions and Behaviour. Low positive relationships exist between teacher learning opportunities and Attitudes and Behaviour Intentions. Strategies need to be employed which give teachers time to meet and collaborate on issues to do with the implementation of Student Outcome Statements and their opportunities to be involved in learning about the change need to be enhanced.

Part 2: Implications for general system-wide change

A general model was used in this study which could be applied to many educational system-wide changes other than curriculum, such as the implementation of Behaviour Management policies and Risk Management policies. The general model was developed using previous research which investigated system-wide educational change in a centralised system in Western Australia and overseas. The general model found that four aspects of receptivity are related to four group one variables and two group two variables (the situation variables are not related and can be excluded).

Planned educational changes, when successful, have a life cycle that can be divided into three stages, initiation, implementation and routinization (Waugh & Godfrey, 1995, 1993, Waugh & Punch, 1987, 1985). "Initiation refers to the processes and planning which lead up to and include the decision to proceed with the change... Implementation refers to the first use of the change on a system-wide basis in the classroom... and routinization refers to whether the change becomes an ongoing part of the system" (Waugh & Godfrey, 1995, p.39).

In relation to the first general characteristic of system-wide educational change, administrators need to be mindful of the need to have sufficient lead-in time and discussion time and this could be done in the context of a proposed timeline for the change. Ideally, an extended timeline assists in developing processes and strategies that provide opportunities to obtain teacher commitment and to minimise any negative impact such as perceived or actual increase in teacher workload. Changes that are initiated by the system will have greater chance of successful implementation if they contain support mechanisms such as mandated and clear policies and are accompanied by resources, sufficient to implement the change.

In relation to the second general characteristic of change, administrators could give strong verbal and policy support for the change. For example, the administrators' policy could ensure that a certain amount of ownership and the power to implement the change rests with those who actually carry out the change. They

could provide mechanisms that will ensure that close interaction exists among people involved in the change. The work organisation and cultures in school can be enhanced to ensure that there is a collaborative environment of trust, support, openness and a willingness to encourage risk-taking and professional support. Collaborative cultures in schools generally foster an approach to continuous improvement and a commitment to improving practice. It is helpful if teachers have concrete and current practical experience related to the change. These conditions contribute to ensuring that the impact of the change is less intrusive than it may otherwise have been. Regardless of the change that is being proposed or mandated, its success will depend on the capacity and willingness of the individuals to implement the change. Strategies such as the provision of networks for individuals, have proven to be successful. Policy making and change management strategies made at the central level need to be flexible and adaptable to local contexts which are beyond the control of high level policy makers. Principals need to contextualise the changes: and that is, they could take into account local factors that will assist the individual and the school to implement the change.

In relation to the third general characteristic of change, administrators could implement policies to provide strong, positive teacher receptivity to the change. The present study suggests that teachers will support the change if they perceive that the benefits of the change will outweigh any difficulties, if they believe that the change compares favourably with the previous system, if they believe their concerns will be addressed, if the principals, most teachers and close colleagues support the change, if they are involved in decisions about the change and if they are provided with learning opportunities about the change.

Other implications can be drawn by educators involved in designing change management programs for curriculum implementation across the whole school system, if they wish to maximise the involvement and support of one of the key stakeholders, the teachers. They need to be mindful that teachers will adapt changes to suit themselves, their classrooms and their students and that whilst the implementation of the Student Outcome Statements has been designed with

maximum flexibility in mind, administrators will have more success if they incorporate the variables identified in this study into their change processes for teachers. Administrators need to ensure that the new program can demonstrate benefits that are superior to the previous system. They need to develop processes which will allow teachers to be involved in decisions relating to the change as this will influence the way in which they intend to behave in terms of implementation. Given that the average age of secondary teachers in Western Australia is about 42 years, it is encouraging that older teachers were positive about the change (Education Department, 1999). This has implications for the current curriculum program being implemented by the Education Department which demands a change in teaching methodology from an inputs approach to an outcome oriented focus.

Part 3: Implications for teachers

The results in this study support the conclusion that the teacher receptivity to Student Outcome Statements is related to teachers' beliefs about the change and, in particular, to their attitudes and beliefs about its benefits, support and the comparison with the previous system. Teacher receptivity is related to teaching processes such as cohesiveness, collaboration and teacher learning opportunities, although these relationships are generally less strong than those between receptivity and teachers' beliefs. Factors associated with the schools, departments and teacher backgrounds do not appear to be strong factors influencing receptivity.

Clearly, the advice for teachers is to ensure that they engage in the process of implementation of the Student Outcome Statements. The study suggests that there are practical and tangible strategies that can be employed to ensure that they are well positioned to implement the change. Teachers can make a commitment to work closely with colleagues, to establish networks and to build on previous knowledge and practice and to attend meetings and forums in order to develop understandings about the Student Outcome Statements. They can ensure that they become proactive in establishing and being involved in the decision-making

processes both at the school and the department level and that they request appropriate support and professional development.

The preliminary qualitative data analysis suggests that teachers agree that Student Outcome Statements address the needs of individual students better, provide for better student learning, more relevant content and they better describe student learning than Unit Curriculum. There was strong support for the notion that Student Outcome Statements were better than Unit Curriculum in facilitating judgements about student learning achievement and effective reporting on student achievement. Given that the teacher respondents had actively engaged in implementing the Student Outcome Statements, the advice to teachers is to begin using them in this way so that they can assess the benefits compared to the previous system. The preliminary result indicated that 91% of teachers supported the use of Student Outcome Statements. The most significant reasons for using Student Outcome Statements were for the purpose of monitoring student achievement (96%), planning teaching and learning programmes (91%) and collecting student assessment information (84%). These results are very high and, as the variables indicate, these are tangible and practical reasons why teachers might see benefits in the use of Student Outcome Statements.

The preliminary data analysis shows that shared teaching goals, cohesiveness, involvement in decision-making and teacher collaboration were higher at the department level than at the whole school level. Teachers in secondary schools rely on their departments to ensure that these factors are maximised, a process which Heads of Department, Teachers-in Charge of subject and individual teachers can influence. If teachers are aware of these factors, they would be more likely to contribute to the implementation and would be less inclined to work in isolation.

Part 4: Implications for further research

Further research is warranted, as the sample of 126 teachers was relatively small, and a larger sample is likely to provide results that can be generalised to the population of all teachers in Western Australia. For example, the situation variables as a group do not appear to contribute significantly to the relationships. However, the size of the sample available for these analyses was reduced and further consideration could be given to these variables with a larger initial sample.

The data collection instrument, the teacher questionnaire, could be improved by providing both easier and harder statements for the items relating to the independent variables and the dependent variables. In this study, the analysis of the scales measuring each variable was undertaken using a Rasch measurement model. For each variable, the difficulties of the valid items were calibrated on the same interval level scale as the variable measures. While acceptable scales were developed and used, they could all be improved and refined in future research. For example, the person measures are generally reasonably well spread along the scale but the item measures are not well distributed along the scale. In particular, the items for the variables, alleviation of fears and concerns and team teaching need revision and probably more items need to be designed and tested. Some correlations are very low or zero, which suggests that these could be left out of the model as they contributed very little to teacher receptivity and this might have been due to the measurement scales, in some cases.

It is suggested that there may be other variables that might contribute to teacher receptivity which have not been included in this model. Other variables used by Waugh and Punch (1987) such as practicality in the classroom and support for new teacher roles may add to the explanatory power of the model. For example, if teachers were able to see that there are practical benefits for them and their students in their classroom, then it would be expected that the correlation between practicality in the classroom and receptivity would be positive. Such benefits might be that the new system provided a sufficient range of classroom learning

experiences, was sufficiently flexible to help teachers manage day-to-day running of the classroom and reflected the educational philosophy of the teachers.

There are, at least, four other variables that may account for extra variance in teacher receptivity. These are teachers' beliefs that they can successfully implement the change, teachers' psychology of student learning in relation to the change, the level of participation of the teachers and how practical the change is in the classroom.

There is potential for further research into the success of the change to Student Outcome Statements as the process moves through the five years of implementation (1999-2003). A follow-up study would be particularly interesting to test whether teachers' receptivity continues to improve as the identified factors are addressed. It is suggested that the following model be used as the basis for any future study of teacher receptivity to a major educational change in a centralised system.

INDEPENDENT VARIABLES (GROUP 1)	INDEPENDENT VARIABLES (GROUP 2)	DEPENDENT VARIABLE Teacher receptivity towards the new system (measured in four aspects)
non-monetary cost benefits	involvement in decision-making	
alleviation of fears and concerns	teacher learning opportunities	• Overall Feelings
significant other support	teacher participation	• Attitudes
feelings compared to the previous system		• Behaviour Intentions
practicality in the classroom		• Behaviour
teachers' psychology of student learning		
beliefs that teachers can successfully implement change		

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APPENDIX A: QUESTIONNAIRE

Teachers' Attitudes Towards the Use of Student Outcome Statements

(This Questionnaire has been designed for those secondary teachers, Heads of Department and Teachers-in Charge of Departments who are ***already*** using Student Outcome Statements).

Thank you for agreeing to participate in this research by completing this questionnaire which is designed to collect information about the use of Student Outcome Statements by secondary teachers. I am currently undertaking a study for my Master of Education into teacher receptivity to change in secondary schools, with particular reference to the use of Student Outcome Statements.

The research explores teachers' attitudes, beliefs and behaviour intentions towards the use of Student Outcome Statements and attempts to establish how work organisations might affect the way in which teachers respond to change.The study is significant as it will add to knowledge about the use of Student Outcome Statements in secondary schools and to our knowledge of change theory.

All responses will be treated confidentially. No individual, group or school will be identified in any report arising from this study.

Please feel free to contact me at any time should you wish to obtain more information.

Work: Phone XXXXXXX *Home: Phone: XXXXXXX*
Fax XXXXXXX *Fax XXXXXXX*

Thank you for your cooperation, it is very much appreciated.

Rose Moroz

In Sections A and B please respond to the items by *circling* the appropriate number that best describes your response. Sections C and E require you to respond on a scale ranging from 'strongly agree' to 'strongly disagree' or 'often' to 'never' with an 'unable to comment' category provided. Please limit your use of the 'unable to comment' category. This should only be used in cases where you genuinely have no identifiable or clear feeling about the statement and are unable to comment. The following rating codes have been used:

Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)	Unable to comment (U)
(4)	(3)	(2)	(1)	U

Often	Sometimes	Rarely	Never	Unable to comment
(4)	(3)	(2)	(1)	U

Should you make a mistake or change your mind, simply cross out the initial response and *circle* another.

Abbreviations: SOS Student Outcome Statements
HOD Head of Department
TIC Teacher-in Charge of Department

Note: HOD/TIC
Where an item refers to HOD/TIC please treat the item as referring directly to you and make a judgement about yourself. e.g. Substitute HOD/TIC with 'I'.

Section A: Demographics

Site:
Case:

1. How many students are enrolled at this school?

less than 300	(1)	800 to 999	(4)
300 to 599	(2)	1000 to 1199	(5)
600 to 799	(3)	1200 to 1499	(6)
		more than 1500	(7)

2. Where is this school located?

Metro (1)	Country (2)

3. What type of school is this?

PSP (1)	PCAP (2)	Other (3)

4. How many teaching staff in your department? *(Include the Head of Department/Teacher-in-charge in your total).*

1	(1)
2 - 5	(2)
6 - 10	(3)
11 - 15	(4)
16 - 20	(5)
21 +	(6)

5. To which teaching department do you belong? *(If you work in more than one, identify the department in which you teach the most).*

The Arts: Art (1) Dance (2) Drama (3) Media (4) Music (5)
English (1)
Health & Physical Education (1)
LOTE (1)
Mathematics (1)
Science (1)
Social Studies/Society & Environment (1)
Tech & Enterprise: Business Ed (1) Computing (2) Home Ec (3) Design & Tech (4)
Other (Please specify)

6.Teaching status

HOD (1)	TIC (2)	Teacher (3)	Other (4) Specify:

7. Years of teaching experience

less than 1 year (1)	3 to 5 years (3)	11 to 20 years (5)	31 or more years (7)
1 to 2 years (2)	6 to 10 years (4)	21 to 30 years (6)	

8. Sex

Male (1)	Female (2)

9. Age

20 to 30 (1)	31 to 40 (2)	41 to 50 (3)	51 to 60 (4)	61+ (5)

Section B: Student Outcome Statements

10. For what length of time have you been using Student Outcome Statements?

0-6 months	(1)
7-12 months	(2)
13-18 months	(3)
19-23 months	(4)
2-3 years	(5)
3 years +	(6)

11. To what extent are you using Student Outcome Statements in Years 8, 9 and 10?

All lower school classes (1)	Some lower school classes (2)	One lower school class (3)

12. Are the Student Outcome Statements being used:

by the whole school?	(1)
only by your department?	(2)
by other departments as well as your own?	(3)
only by you?	(4)

13. The decision to begin using Student Outcome Statements was made by:

the principal	(1)
the whole school	(2)
some individuals in the school	(3)
only by you	(4)

14. Are you using SOS as part of EDWA's *Gifted and Talented Program*?

Yes (1)	No (2)

15. Student Outcome Statements were trialed by EDWA in 88 schools in 1994 & 1995. Were you involved in the trial?

Yes (1)	No (2)

16. Do you use the Monitoring Standards in Education (MSE) tests?

Yes (1)	No (2)

17. For what purposes are you using Student Outcome Statements?

monitoring student achievement	Yes (1)	No (2)
collecting assessment information	Yes (1)	No (2)
reporting student achievement to parents	Yes (1)	No (2)
planning teaching/learning programs	Yes (1)	No (2)
school development planning	Yes (1)	No (2)

Section C: Beliefs and Behaviours

Feelings Towards the Unit Curriculum Compared to Student Outcome Statements

In comparison to the Unit Curriculum, the use of Student Outcome Statements allows me to:	**SA**	**A**	**D**	**SD**	U
18. provide for better student learning.	5	3	2	1	U
19. manage my classroom better.	4	3	2	1	U
20. provide more relevant content.	4	3	2	1	U
21. address the needs of individual students better.	4	3	2	1	U
22. provide more varied experiences for the students.	4	3	2	1	U
23. better describe student learning.	4	3	2	1	U
24. make better judgements about student learning achievement.	4	3	2	1	U
25. plan more relevant learning experiences for my students.	4	3	2	1	U
26. demonstrate my accountability.	4	3	2	1	U
27. report more effectively on student achievement.	4	3	2	1	U

Benefits of Student Outcome Statements

	SA	**A**	**D**	**SD**	**U**
28. In weighing up the balance between any extra work generated for you by SOS and *your satisfaction with teaching*, the use of SOS is worthwhile.	4	3	2	1	U
29. In weighing up the balance between any extra work generated for you by SOS and *your home life*, the use of SOS is worthwhile.	4	3	2	1	U
30. In weighing up the balance between any extra work generated for you by SOS and *better student classroom learning*, the use of SOS is worthwhile.	4	3	2	1	U
31. In weighing up the balance between the total problems for you and *the total benefits for the student*, the use of SOS is worthwhile.	4	3	2	1	U
32. In weighing up the balance between any extra responsibility for student assessment and *your work load*, the use of SOS is worthwhile.	4	3	2	1	U

Attitudes Towards Student Outcome Statements

	SA	**A**	**D**	**SD**	**U**
33. I have opposed the use of SOS.	4	3	2	1	U
34. I will probably support the use of SOS in the next few years.	4	3	2	1	U
35. I dislike using SOS.	4	3	2	1	U
36. I will probably dislike the use of SOS in the next few years.	4	3	2	1	U
37. I support the use of SOS.	4	3	2	1	U

Support for Student Outcome Statements

	SA	A	D	SD	U
38. The principal at this school supports SOS.	4	3	2	1	U
39. Most teachers in this department support SOS.	4	3	2	1	U
40. My closest colleague at this school *does not* support SOS.	4	3	2	1	U
41. The district superintendent supports SOS.	4	3	2	1	U
42. Most teachers in this school support SOS.	4	3	2	1	U
43. The learning area superintendent supports SOS.	4	3	2	1	U
44. A deputy principal at this school supports SOS.	4	3	2	1	U
45. The HOD/TIC in my main teaching area supports SOS.	4	3	2	1	U

General Behaviour Intentions Towards Student Outcome Statements

In my behaviour and communication with others I will probably:	SA	A	D	SD	U
46. actively oppose the use of SOS.	4	3	2	1	U
47. say that SOS are useful for monitoring student achievement.	4	3	2	1	U
48. say that SOS are useful for reporting student achievement to parents.	4	3	2	1	U
49. say that SOS are useful for planning teaching/learning programs.	4	3	2	1	U
50. say that SOS *are not* useful for school development planning.	4	3	2	1	U
51. avoid discussing issues about the use of SOS.	4	3	2	1	U

Alleviation of Concerns

	SA	A	D	SD	U
52. There are regular school meetings at which I can raise my concerns about SOS.	4	3	2	1	U
53. Whenever there are SOS problems there is a senior person at this school to whom I can turn for advice.	4	3	2	1	U
54. There is good general school support whenever I have problems with the implementation of SOS in the classroom.	4	3	2	1	U
55. There is at least one school person with whom I can talk about any student problems associated with SOS.	4	3	2	1	U
56. Any concerns I have about SOS can be solved informally in general conversation at school.	4	3	2	1	U
57. I can access Central Office support to obtain advice about SOS.	4	3	2	1	U
58. I can access District Office support to obtain advice about SOS.	4	3	2	1	U

Behaviours

	Often	Some-times	Rarely	Never
59. I have spoken in support of the use of SOS in forums such as staff or departmental meetings.	4	3	2	1
60. I have openly voiced my concerns about the use of SOS in forums such as staff or departmental meetings.	4	3	2	1
61. I have attended meetings and professional development to improve my knowledge about the use of SOS.	4	3	2	1
62. I have refused to participate in forums which address the use of SOS	4	3	2	1
63. I have shared my knowledge about the use of SOS with other teachers	4	3	2	1
64. I have provided written feedback to Central Office or District Office personnel on aspects of SOS.	4	3	2	1

Section D: Attitudes Towards Student Outcome Statements

65. As you read down the list of adjective pairs, place a cross in the box on the continuum which best describes how you feel about Student Outcome Statements

satisfactory					unsatisfactory
valuable					worthless
wise					unwise
good					bad
intelligent					absurd
permissive					restrictive
realistic					idealistic
effective					ineffective
necessary					unnecessary
uncomplicated					complicated
clear					unclear
time efficient					time inefficient
liberating					constraining

Section E: Work Organisations

Teacher Collaboration

In this department:	SA	A	D	SD
66. I share teaching resources/materials with other teachers.	4	3	2	1
67. I *do not* give support to other teachers when they are having problems in their teaching.	4	3	2	1
68. I share teaching ideas with other teachers.	4	3	2	1
69. I can get advice from other teachers if I have a teaching problem	4	3	2	1
70. Teachers seek my advice about their teaching problems.	4	3	2	1

In this school:	SA	A	D	SD
71. I give support to teachers who are not in my department when they are having problems with their teaching.	4	3	2	1
72. I share teaching resources/materials with teachers who are not in my department.	4	3	2	1
73. Teachers who are not in my department seek my advice about their teaching problems.	4	3	2	1
74. If I have a teaching problem I get advice from teachers who are not in my department.	4	3	2	1
75. I don't offer advice to teachers about their teaching unless I am asked for it	4	3	2	1
76. I share ideas with teachers who are not in my department.	4	3	2	1

Involvement in Decision-making

In this department:	SA	A	D	SD
77. Teachers participate in selecting instructional materials resources.	4	3	2	1
78. Teachers participate in determining the content of the professional development sessions we have.	4	3	2	1
79. Teachers *do not* participate in determining appropriate instructional methods.	4	3	2	1
80. The HOD/TIC participates in instructional related decision-making with the teachers.	4	3	2	1
81. Teachers are encouraged by the HOD/TIC to modify the curriculum to meet students' needs.	4	3	2	1
82. I am involved in decisions which are related to the use of SOS.	4	3	2	1
In this school:				
83. Teachers are encouraged by the principal to modify the curriculum to meet students' needs.	4	3	2	1
84. Teachers participate in determining the type of whole school professional development we have.	4	3	2	1
85. I am involved in decisions outside of my department which are related to the use of SOS.	4	3	2	1
86. Teachers are encouraged by a deputy principal to modify the curriculum to meet students' needs.	4	3	2	1

Shared Teaching Goals

In this department:	**SA**	**A**	**D**	**SD**
87. The teaching staff agree on the outcomes our students should be achieving	4	3	2	1
88. Teachers *do not* share a high level of commitment to student learning	4	3	2	1
89. The values and philosophy of education of the HOD/HC are similar to those held by the other teachers	4	3	2	1
90. There are explicit departmental guidelines about the things teachers are to emphasise in their teaching.	4	3	2	1
91. Most teachers have values and philosophies of education similar to my own	4	3	2	1
In this school:				
92. Teachers share a high level of commitment to student learning	4	3	2	1
93. Most teachers have values and philosophies of education similar to my own	4	3	2	1
94. The teaching staff agree on the outcomes our students should be achieving	4	3	2	1
95. The values and philosophy of education of the principal are similar to my own	4	3	2	1

Cohesiveness

In this department:	**SA**	**A**	**D**	**SD**
96. Most of the teachers know what I do in my classroom	4	3	2	1
97. I tend to do things that are likely to be accepted by only a few teachers in my department.	4	3	2	1
98. I feel that what goes on in this department is my responsibility	4	3	2	1
99. Most of the teachers *don't* know what my teaching goals are	4	3	2	1
100. I tend to do things that most teachers in my department don't understand	4	3	2	1
101. I work for days without talking to colleagues about my teaching	4	3	2	1
In this school:				
102. Most of the other teachers *don't* know what I do in my classroom	4	3	2	1
103. Most of the other teachers know what my teaching goals are	4	3	2	1
104. I tend to do things that are likely to be accepted by only a few teachers in my school.	4	3	2	1
105. I tend to do things that most teachers in my school don't understand	4	3	2	1
106. I feel that what goes on in this school is my responsibility	4	3	2	1
107 I work for days without talking to colleagues about my teaching	4	3	2	1

108 Have you been involved in team teaching ?

Yes (1)	No (2)

If NO, please proceed to the next section **Teachers' Learning Opportunities**

Team Teaching

	SA	A	D	SD
109. I enjoy sharing team teaching responsibilities	4	3	2	1
110. I value team teaching	4	3	2	1
111. There should be more team teaching	4	3	2	1
112. I *do not* look forward to team teaching	4	3	2	1
113. Team teaching is best for students	4	3	2	1
114. Students prefer team teaching	4	3	2	1
115. I like to share team teaching responsibilities with other teachers	4	3	2	1

Teachers' Learning Opportunities

In this department:	SA	A	D	SD
116. New ideas presented at department level professional development sessions are implemented by teachers	4	3	2	1
117. When teachers are not doing a good job the HOD TIC works with them to improve their skills	4	3	2	1
118. The HOD TIC provides suggestions to help teachers improve their performance.	4	3	2	1
119. Other teachers encourage me to try out new ideas	4	3	2	1
120. The HOD TIC provides support materials to help teachers	4	3	2	1
121. I *do not* have opportunities to learn new things	4	3	2	1
122. The HOD TIC encourages teachers to try out new ideas	4	3	2	1
In this school:				
123. Other teachers encourage me to try out new ideas	4	3	2	1
124. When teachers are not doing a good job, the principal works with them to improve their skills.	4	3	2	1
125. I *do not* have opportunities to learn new things	4	3	2	1
126. The principal encourages me to try out new ideas	4	3	2	1
127. When teachers are not doing a good job, the deputy principal works with them to improve their skills.	4	3	2	1
128. New ideas presented at whole school professional development sessions are implemented by teachers.	4	3	2	1
129. The deputy principal encourages me to try out new ideas	4	3	2	1

COMMENTS

Please feel free to comment on any aspect of this research.

THANK YOU FOR YOUR HELP

Please return your completed questionnaire to

Mrs Rose Moroz
XXXXXX Senior High School
XXXXXX
XX

APPENDIX B: LETTERS

The Principal
High and Senior High Schools

Dear Colleague,

I am seeking your support for a study which I am currently undertaking for my Master of Education at Edith Cowan University. The focus of the study is on teacher receptivity to system-level change in secondary schools: in this case, the use of Student Outcome Statements. The information obtained will be of benefit and available to all Secondary Principals. The study is significant as it will add to knowledge about the use of Student Outcome Statements in secondary schools and to our knowledge of change theory. Approval for the study has been granted by the Edith Cowan University Ethics Committee.

All responses will be treated confidentially. No individual, group or school will be identified in any report arising from this study.

As there is no information available on how many teachers are using Student Outcome Statements in secondary schools I have provided a form (buff) which you could distribute to all teachers at a staff meeting to assist you in identifying teachers who use Student Outcome Statements. There is no need to distribute this form if you already know how many teachers are using Student Outcome Statements and who they are.

The best possible information would result if all teachers using Student Outcome Statements were to participate. I am seeking your support in order to maximise this participation and would appreciate it if you would distribute the questionnaire (white) to those teachers who are using Student Outcome Statements and who express their willingness to participate.

The questionnaire, *Teachers' Attitudes Towards Student Outcome Statements*, explores teachers' attitudes, beliefs and behaviour intentions towards the use of Student Outcome Statements and attempts to establish how work organisations might affect the way in which teachers respond to change.

I have enclosed what I hope will be sufficient questionnaires. If you require more please feel free to copy whatever number you require or contact me by phone (xxxxxxx) or by fax (xxxxxxx) and I will send you the appropriate number.

Please complete the attached form (green) and return it to me as soon as it is convenient. I have enclosed an addressed return envelope.

Thank you for your assistance.

Rose Moroz

Teachers' Attitudes Towards Student Outcome Statements

TEACHER SURVEY

Teachers in Secondary Schools

Dear teachers

I am currently undertaking a study for my Master of Education into teacher receptivity to change in secondary schools, with particular reference to the use of Student Outcome Statements.

I would appreciate it if you could take a few minutes to complete the following information and would be grateful if you would then commit to the completion of a 20 minute questionnaire as the best possible outcome for this research would be for all secondary teachers who are using Student Outcome Statements to participate. Your principal will then distribute the questionnaire.

The questionnaire, *Teachers' Attitudes Towards Student Outcome Statements*, explores teachers' attitudes, beliefs and behaviour intentions towards the use of Student Outcome Statements and attempts to establish how work organisations might affect the way in which teachers respond to change.

The study is significant as it will add to knowledge about the use of Student Outcome Statements in secondary schools and to our knowledge of change theory.

All responses will be treated confidentially. No individual, group or school will be identified in any report arising from this study.

Are you using Student Outcome Statements?

YES (1)	NO (2)

IF YOU HAVE ANSWERED YES

PLEASE COMPLETE THE FOLLOWING INFORMATION IF YOU ARE WILLING TO PARTICIPATE IN THE RESEARCH.

Name:_____Department:_____

PLEASE RETURN THIS SURVEY TO YOUR PRINCIPAL & YOU WILL BE PROVIDED WITH A QUESTIONNAIRE

Thank you for your assistance

Rose Moroz

Site:

Teachers' Attitudes Towards Student Outcome Statements

SCHOOL SUMMARY RETURN

The Principal
High and Senior High Schools

Dear colleague

It would be helpful if you could complete the following information and return this form to me as soon as convenient.

'Teachers' includes Heads of Department and Teachers-in-charge of Departments.

NUMBER OF STUDENTS AT THE SCHOOL _____

NUMBER OF TEACHERS ON STAFF _____

NUMBER OF TEACHERS USING STUDENT OUTCOME STATEMENTS

_____

NUMBER OF TEACHERS ISSUED WITH THE QUESTIONNAIRE (white)

_____

Your assistance and support is very much appreciated. Thank you.

Rose Moroz
Phone: xxxxx
Fax: xxxxx

Return to: Rose Moroz