Abstract

This thesis presents an examination of the way in which an educational initiative, delivery of the curriculum using a vertical timetable, impinges upon the education community concerned, in particular the teachers. The research aims to provide school administrators and policy makers with insights into the impact of an educational change.

The investigation was conducted over the period of 2 years in a group of schools where the vertical timetable was introduced. Teachers, administrators, students and parents/guardians participated in the study. The researcher adhered to a constructivist approach to the research and employed a case study method. Responses were gathered using questionnaires and a focus group interview.

The study identified key issues for students and teachers. Analysis of these themes yielded several practical recommendations for administrators who plan to implement vertical timetabling.

The impact of a vertical timetable on the school community:

a case study in Queensland secondary schools

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Declaration

I testify that the substance of this Thesis has not already been submitted for any degree or qualification.

I attest that this is the original work of the author and that all the support and assistance received in the preparation of this professional research project as well as the sources used have been properly acknowledged in this Thesis.

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(Signature)

Chapter 1

Introduction

Education is not the filling of a pail, but the lighting of a fire.

William Butler Yeats

The context of the project

Since the 1970's there have been several major innovations and shifts in policy in education in Queensland. Many of the changes were as a result of four reports: Radford (1971), Scott (1974), Viviani (1990) and Wiltshire (1994). Other useful input came from *Leech's Delay of Specialisation (1975)* and the Director's Committee on Secondary Education *Report to Schools* (1976).

The so-called traditional form of curriculum delivery in secondary schools, the horizontal timetable, was seriously under threat by the 1980's as schools were encouraged to adopt organisational procedures that were best suited to the educational needs of the students (Department of Education 1986,2). Schools began to head to more student centred education.

Educators interested in such innovations were clearly influenced by the apparent success of overseas experiments, namely those of Klausmeier's (1977) Independent Guided Education. This work was seminal to the early experiments in Victoria (Newton 1990). Queensland educators had the opportunity to study schools in other states as a result of Participation and Equity Program grants that were then available

from the Federal Government. School administrators seeking curriculum delivery and organisation initiatives which focused on a more student centred approach to the delivery of curriculum had the opportunity to access successful models in the Australian context. Unfortunately, bringing good educational ideas from one state to another proved to be difficult. Teachers as well as policy makers tended to adopt a hit and miss approach in an attempt to introduce successful innovations they had seen. There was little in the way of supporting literature to help them come to terms with the difficulties of managing an innovation. This study aims to address this gap in the professional literature.

Statement of the Problem

The researcher's purpose in conducting this investigation was twofold: firstly, to study the introduction of the vertical timetable into selected Queensland secondary schools, and secondly, to determine the ways in which the members of the schools' communities, mainly the teachers, were affected.

The vertical organisation of curriculum delivery was the focus of this research. The vertical timetable is a way of delivering the curriculum where students select the subjects they wish study according to their academic achievements in related areas or interest in the subject, not because of the way

the school has allocated the course of study where the same age cohort progresses as a body to the next stage of study. The researcher was interested in the ways the members of schools were affected by this organisation of curriculum delivery. The researcher decided to use four cohorts of participants from whom she would gather the data: those whom she believed were the main stakeholders in each school regarding the curriculum and its delivery. Consequently, a broad question was developed:

What themes emerge from teachers, administrators, students and their parents/guardians regarding the introduction of the vertical timetable in secondary schools?

The participants were asked a series of sub-questions:

- the perceived reasons for the introduction of the vertical timetable,

- the participants' involvement in the day to day operation of the vertical timetable,

- the future of the innovation.

Definitions of key terms

The word *curriculum* is often used in conversations about and within schools. In one use of the word it refers to a particular course of study, the English or Mathematics curriculum, for example, where the word is interchangeable with syllabus. In this context the word refers to a particular course of study. In the Year 12 English syllabus or curriculum, for example, a list of novels and plays will be given from which

the students will read one or two of each. There will also be a prescribed list of genres that the students must experience, for example, an argumentative essay, an exposition on a theme or a persuasive speech. In the Mathematics curriculum, areas to be studied would be given, for example, volume, speed, and algebra.

Another use of *curriculum* refers to "a set of broad inter-related decisions about what is taught that characterises the general framework within which teaching is planned and learning takes place" (Eraut 1975). This interpretation of the word frequently includes the school's philosophy or mission statement, which is used to explain the basic principles, character and purpose of the school. The reference to curriculum often contains a broader meaning, including that of a basic approach to education. This varies from the previous use of *curriculum* where the word was used with a narrower meaning. The researcher uses the word *curriculum* to mean the lived totality of students' experiences, both intended (planned by teachers and the school) and unplanned.

Historically, schools have organised the way the students are taught in what is commonly understood to be a horizontal timetable. This can be seen where a student, who is 13 years old, enters Year 8 and studies a set number of subjects for a given time. In a typical school, the students must study English, Mathematics, Social Studies, and a language other than

English (LOTE) for a year. The students may also study Home Economics and Manual Arts, Physical Education, Art and Music for a semester or a year, depending on school policy. At the end of the year, all students progress to the next grade or year level, almost always regardless of student academic achievement or interest. This transition takes place with little or no account of their prior knowledge or misconceptions they may bring to a subject. Generally there is some room for individual subject specialisation at the commencement of Year 9, with students able to choose from two levels of Mathematics, and five subjects from those studied in Year 8 or other subjects depending on the school, for example, Speech and Drama, Design and Technology. Individual choice is often limited to the academic pathways offered by the way in which the subject offerings are timetabled by the schools. That is, the school timetable is critical to the students in terms of subjects they can choose and ultimately the outcomes they get from schooling.

The word *timetable* is used in most schools to describe the organisation of the school day. It refers to the length of lessons, for example, 40 or 50 minute periods of time in which the subjects are taught. Most school days comprise six or seven lessons. The ways in which time is allocated is one difference between a secondary and a primary school (Bryan 1980,239). The timetable regulates a school's activities more immediately than the school's formal curricula (Allen 1989,2) and it is the

timetable that affects the daily lives of the teachers and students.

As well as being a statement of the school's daily organisation, the timetable represents the policy of the school with regard to "the rationing of opportunities for learning, of resources of teachers, spaces and times, possibilities for the organising of groups" (Allen 1989,2). The nature and significance of the secondary school timetable itself has been presented as possessing six views by Allen (1989), but the depth and scope of such an analysis is beyond the scope of this study. In the expression, *vertical timetable*, the word is used slightly differently, and it is in this way that the term is used throughout this thesis.

The *vertical timetable* is the organisation of teaching in a school where the traditional year levels, for example Years 8,9 and 10, are replaced with three levels of work, say Levels 1,2 and 3. The progression rate is different, although it must be noted that the progression rate with a horizontal timetable can also be varied as with streaming. With the vertical timetable, students are not tied to a particular Year level for twelve months. Instead they may complete a Level in either a term or semester, depending on the model adopted by the school (Goosem 1986, Middleton 1982, Power 1990).

Blocking or *block timetabling* involves the use of blocks of time instead of single lessons. The notion utilises the grouping together of some subjects so that all the time allocated to each occurs at the same time no matter how this is divided (Allen 1989,112). More traditionally, a horizontal timetable involves students selecting subjects from sets of offerings. The subjects are studied for a set period of time, then the student progresses with the rest of the cohort in that subject to the next year, almost regardless of student interest or achievement. More recent innovations in timetabling use a vertical timetabling approach where students choose their own subjects, within certain parameters, according to their level of achievement in the subject. Often the student will study in a group of students from different Year levels. This arrangement allows homogeneous grouping of students according to their interest and/or ability in the subject. Students may therefore study particular units of interest, or work with their peers of similar ability. As a general practice it appeared that in Year 9 Mathematics. For instance, approximately 60% - 70% of the students were studying Level 2 Mathematics, with the balance equally divided between Level 1 and Level 3 Mathematics (M.Power, personal communication October 1996).

The history of this project

As a result of many years of teaching and working with students who often faced failure when studying subjects in which

they had little interest, motivation and/or ability the researcher became interested in the role of curriculum organisation. Many students were frequently locked into a subject because of the way in which the subjects were presented to them for selection (Board of Senior Secondary School Studies, 1998). There was often no room to change. Interestingly, in such a traditional form of organising curriculum delivery, students are frequently kept in the same age cohort, despite the fact that they have clearly demonstrated an outstanding familiarity of the content, skills and processes of a subject. Undoubtedly, this situation sometimes arose because the teacher's interpretation of the syllabus did not meet the needs of the students, not as a result of the manner in which the curriculum is organised.

In a context of increased school retention numbers in the senior secondary school and continuing high levels of unemployment, attention is being paid to issues of relevance of schooling for those students who do not wish to proceed to tertiary level studies (Education Queensland 1999,2). To address the requirements of these students, the need has been identified to provide programs within secondary schools which might be vocationally orientated and to integrate vocational learning with accredited school courses. Increasing numbers of students need to be offered subject selections that will equip them with skills and abilities relevant for employment and life.

Other students may be considered at risk of not completing Year 12 to a satisfactory level. Yet some schools offer only the so-called academic subjects rather than those with a vocational content, forcing some students to study subjects that are unsuitable for their interests and abilities. Social and technological changes, as well as the expectations of the work place, have compelled schools to review their academic practices (Education Queensland 1999,7). Consequently, many schools offer Vocational Educational (Voc Ed) subjects in Year 11 and 12. These subjects are often nationally recognised as entry to a TAFE college and in Overall Performance in particular subjects. 40% of students in Queensland will have Voc Ed components in their Senior Certificates in 1999 (K.Purnell, personal communication, July 1999). New approaches have been adopted in many instances to address the interests and requirements of a new generation of students. In fact, more than 80% of Queensland Senior Secondary schools offer Vocational Educational Training. The state has more new Apprenticeships (360) and Traineeships (1550) than the rest of Australia combined (K.Purnell, personal correspondence, July 1999). Queensland's initiative in this endeavour was apparent as early as 1996, when the participation rate in school industry programs was 17.5% for all students, the highest in the nation (Ainsley & Fleming 1996,28). A National Survey into School Industry Programs (1996) conducted by the Australian Council of Educational Research indicated that, even three years ago, 35% of students

who studied Voc Ed units used the programs for "advanced standing or credit into apprenticeships or training" (Ainsley and Fleming 1996,59). Queensland has taken major steps in the direction of generating the new outcomes expected for schools in a rapidly changing society as identified by Darling-Hammond (1993), Fullan (1993) and Fullan and Miles (1992). This has clear implications for timetabling which will be addressed later.

New views of how people learn are emerging. These notions complement and in some cases contrast with traditional views (Weinert & Helmke 1995). Drawing on some of these views, this research aims to challenge aspects of accepted practice and theory and complement the current knowledge. Just as the emphasis on teacher control has shifted to one of the teacher as a leader of learning or "knowledge worker" (Education Queensland 1999,17), the model of set courses for students has been abandoned in favour of one where the student adopts an active role (Bruner 1986, 108). This can be seen with subject selection for example, and the incorporation of *elective subjects* in many schools. This shift in approach is seen by many as a better way to address the needs of the students.

No single method of curriculum delivery is the best for all students and for all learning goals (Bruner 1986). From experience in several secondary schools the researcher had

observed that many students have achieved sound results in subjects delivered with the horizontal curriculum. However, over time, is this the best form of organisation of curriculum delivery for all students? Might students' outcomes be, at best, as good as, if not better, if more 'user friendly' ways of curriculum delivery are adopted? This view is often supported by the schools themselves and alternate methods of organisation of curriculum delivery have been adopted to address the perceived shortcomings. "Most schools however, have a structure that is designed to best suit a few student stereotypes, offering very limited choice in curriculum" (Wilson 1996). Other schools perceived similar shortcomings of the traditionally delivered curriculum: "Under the traditional high school curriculum, this student would be disadvantaged by the inflexibility which is caused by organising work into year levels" (Runcorn State High School Junior Subject Handbook, 1996). One means used to address these difficulties was the vertical timetable, and many schools have introduced this method of organisation of curriculum delivery to address the perceived needs of the students.

The vertical timetable was first introduced into a few Queensland schools in about 1988, but has been in limited use in other states since an urban Victorian secondary school first introduced it in the 1970's. Use of the vertical timetable has increased greatly since this time, spreading to all states

(Goosem 1986, Spear 1978). The development, in Australia, of vertical timetabling has occurred largely without any theoretical underpinnings. Practitioners have acted with little or no literature or knowledge to guide them in either the choice of a more flexible method or the way in which to administer it.

Klausmeier (1976) is the educator who is generally acknowledged as the developer of the modern vertical timetable. He wrote on the topic as had other American educationalists such as Brown (1963) and Conant (1967), but their work is based upon experiences in the United States education system. There are important differences between education systems in the USA and in Queensland. Unlike systems in the USA, Queensland secondary schools have had, for many years, a school based, externally moderated assessment system which is heavily reliant on teacher decision making in authentic settings. This difference makes a study of vertical timetabling in Queensland timely and important in terms of adding to the literature on the subject.

The American literature provided a useful beginning point for this research. It drew the researcher's attention to issues such as personal involvement and consequent ownership of the vertical timetable, the ways in which the members of the school communities are benefited or disadvantaged, and the manner in which any problems are addressed. These issues are discussed in Chapter 5.

The significance of this research

This inquiry attempts to examine the effects of the introduction of a change in educational practice in secondary schools. In doing so, it has sought to provide a report to educators and other interested parties who wish to know more about what happens when a vertical timetable is implemented.

There is a clear gap in the literature that is concerned with the theory and practice of delivery of the curriculum using the vertical timetable. As more schools begin considering the introduction of a vertical timetable (M.Power, personal communication, October 1996), it is important to provide a framework for administrators. The study may also contribute to wider debates in the educational community about how to improve the administration and potential outcomes of the vertical timetable.

For the researcher, this study has provided the opportunity to reflect on the practices of schools and how they sometimes do not meet the needs of the students. As part of this study, the successes and failures of the traditional way of delivering the curriculum were investigated. The study of the effects of the introduction of the vertical timetable provided an opportunity to identify, from the point of view of teachers and students, some of the advantages and disadvantages of vertical timetabling. This study also offers suggestions for addressing

some of the negative effects that the vertical timetable was found to have on teachers.

Outline of the research

Change and innovation are ongoing in schooling. As an educator, the researcher has witnessed and experienced many innovations and shifts in policy that have affected teachers, their students and administrators with varying degrees of success. This thesis attempts to provide new knowledge for administrators, educators and other interested parties following an investigation into one of these initiatives: the way in which curriculum delivery in secondary schools in Queensland has been rethought, and, in particular, the ways in which it impinges upon the school community and the teachers. The researcher believes that the traditional horizontal curriculum has been found lacking by many educators, and to address this perceived shortcoming, the vertical timetable has been introduced in some schools in attempts to better meet the individual needs of the students. The project aims to develop new knowledge in this field of academic interest and thus contribute to the limited amount of literature in the organisation of curriculum delivery.

The researcher sees the significance of this inquiry as twofold: firstly the theoretical framing of the research draws on the current literature concerned with learning theories, change theories and the literature concerned with the impact of

change on teachers; secondly it is grounded in the lived experiences of those who have participated in the change.

This study had four key phases. The first comprised a preliminary study that was conducted in several schools. The second study was undertaken in the same schools but involved different participants. Emergent themes and issues were identified and addressed in greater detail in the third and fourth phases of the inquiry. Key issues included: the ways in which the students were seen to benefit from the vertical timetable, the personal stress reported by many teachers, and the perceived disadvantages of a vertical timetable and ways to address and deal with these obstacles.

The research was conducted in eleven schools which is documented in this thesis. The preliminary studies were reported in the advanced research tasks required for this degree (A summary of the findings of this work is presented in Chapter 4). Data collection in this study involved the use of questionnaires and a focus group interview. The data analysis identified a number of positive and negative outcomes for the students and teachers of the implementation of a vertical timetable. Data analysis and reflection informed by the research and the literature developed recommendations for possible consideration by schools.

Conceptually, the study draws on the principles of the management of change in educational practice (Fullan 1993, Fullan & Miles 1992, Wilenski 1986), the notions of the significance of the structure of the timetable in a secondary school (Allen 1989) and the theory of curriculum construction (Brady & Kennedy 1999). These resources were used to frame the empirical data obtained from the case studies of schools which had implemented the vertical timetable.

This research project was concerned to determine the impact of the introduction of the vertical timetable in secondary schools and how it impinges on members of a school's community. The interest in schools in the vertical timetabling has arisen from new theories of learning and discontent by teachers, students and parents/guardians with the traditional horizontal method of delivering school subjects.

This chapter establishes the research questions and the background of the study. The aims and research questions are identified in relation to the statement of the problem. Definitions of key terms deployed in the study and an overview of the history of the project have been presented. The significance of the study is argued to lie in the mix of theoretical framing and is grounded in its critical conceptual and practical values. An outline of the importance and

relevance of this study to the development of knowledge is presented.

What now follows, in Chapter 2, is a review of a broad range of literature addressing organisation of curriculum initiatives as well as associated topics, such as the causes and results of stress in the workplace. Chapter 3 presents a discussion of the conceptual framework of this study. In Chapter 4, relevant methodological issues for the inquiry will be examined. The following chapter, Chapter 5, analyses the data and reports on the findings. The final chapter is divided into four sections: the first presents a summary of the thesis; the second describes the implications of the main findings; the third presents recommendations for consideration by the schools. The final section introduces several methodological issues.

Chapter 2

Review of Literature

The things taught in schools are not an education but a means to an education.

Ralph Waldo Emerson

The following are the areas of literature which are examined in this chapter:

* Relevant theories of learning

* Implementation variables in curriculum innovation

* The vertical timetable, individual learning and other models of curriculum delivery

* The effects of educational change on teachers

These areas were part of an early consideration of the research problem and as the study developed they became the basis of a framework of the research. The first area of literature reviewed includes topics such as the constructivist view of learning and Piaget's Theory of Cognitive Development (Chapman 1988, McInerney & McInerney 1998). New views of learning have emerged in recent years and coincide with a greater concern by teachers to meet the needs of individual students.

Literature associated with the development and implementation of change is the second area drawn upon, in particular, the influence of teachers' attitudes to an innovation or change is considered. This literature identifies the important considerations for the management of educational change. Literature concerned with the theory

underpinning the vertical timetable and individualised
learning is considered. Several examples of other models of
curriculum delivery are also taken into account. The review
will argue that before educational change is adopted,
administrators and change agents should be familiar with
current issues regarding curriculum delivery. The topics
highlighted in this review are indicative of such issues:
blocking, split shift timetables and timetables with different
divisions of time.

Literature reporting the effects of educational change on
teachers is then considered. The review will argue that
informed managers of change must understand the likely
outcomes of an educational innovation. Reported consequences
of educational innovation include a sense of powerlessness,
anomie and confusion, as well as one of stress. Feelings of
powerlessness and confusion are discussed. Literature from
Durkheim to the present is considered.

Theories of learning

New hypotheses have coincided with concerns to provide
more student centred approaches to teaching and schooling
generally. This section draws on literatures that are
concerned with student centred curriculum, Piaget's Theory of
Cognitive Development, as reinterpreted by McInerney and

McInerney (1998), and the notions of learning modes as described by Keefe (1979), and McCarthy (1981).

In some cognitive theories, such as Bandura's Social Learning Theory (Trenholm 1986,125) and Rokeach's Value Theory (Trenholm 1986,127), the learner is seen to play an active role in building personal meanings regarding his/her academic experiences. The views of both the participants and the students are frequently referred to as personal constructs (McInerney & McInerney 1998,5, Griffin 1997,129). Adopting this definition, knowledge is seen to be built up from individual constructs. The horizontal curriculum, depending on the way it is used, can allow a wide range of learning levels. This results when all classes (in a subject) are not at the same point. This was the case at Glenmore State High School in the 1970's with 180 students in Year 8 studying English, Science, Mathematics and Keyboarding, for example. Problems arose with keeping check on the individual academic pathways, as well as guidance with respect to each student's target (M.Maher, personal correspondence, October 1998). In many other schools with a horizontal timetable the curriculum delivery frequently ignored the fact that a common rate of acquisition of knowledge or progress of learning, based on the rigid "lock step" delivery of the curriculum, does not exist.

Constructivism, conversely, supports the view that

learning is established via student exploration and discovery, practices that are individual both in order of occurrence and rate. Constructivism can also be defined as a framework for developing principles of effective teaching and learning. In this context constructivism is drawn from cognitive psychology which involves, in general, learning theories. Implicit in this explanation is the fact that learners construct their own understandings (McInerney & McInerney 1998,5). In this interpretation constructivism is seen as converging with the central concept of the vertical timetable, where individual students construct individualised learning pathways.

The biologist cum psychologist, Piaget(1896-1980), advanced the idea that:

> there should be an optimal match between the development stage of the child and the logical properties of the material to be learnt (McInerney & McInerney 1998,32).

This aspect of his Theory of Cognitive Development (McInerney & McInerney 1998,20) can be broadly interpreted as inferring that the curriculum should be matched to the student's ability and interests. It must be noted that occasionally a student's perceived interests do not parallel his/her actual interests. When this occurs, special efforts are required by the educators and carers to ensure that these elements are further considered. If one accepts Piaget's perspective of the essentials for education, one can then readily embrace the

tenets of a student centred curriculum. The essentials of the
Piagetian theory suggest:

> individualisation of learning experiences so that
> each student is working at a level that presents an
> optimal match between what the student knows and the
> new knowledge to be acquired (McInerney & McInerney
> 1998, 33).

In other words, educators who are interested in best meeting

the needs of the students, should allow the student to study

subjects or units of work that best suit his/her ability with

regard to topic, degree of difficulty and pace of progress

(Bury & Hooper 1990).

An approach informed by this principle has been adopted

in some schools in order to provide experiences better

tailored to match the interests and abilities of the students.

A number of schools are now delivering the curriculum using

the 8 Key Learning Area (KLA) framework (K.Purnell, personal

correspondence, August 1999). It can be expected that some

tension results between the system-level concerns and the

focus on individual needs. One school has attempted to combine

the two and adopted an approach combining the nationally

prescribed KLA's and curriculum pathways provided for the

local students because of:

> the failure of educational institutions to provide
> school experiences that meet the needs of
> adolescents. Continual failure of school systems
> will result in fewer opportunities for students to

reach their full potential in adulthood (Woree State High School 1999).

An interesting *Innovation and Best Practice Project* has seen the KLA syllabuses superimposed in Health and Physical Education and Study of Society and the Environment, to initiate and promote effective student learning. In what promises to be a groundbreaking trial, the school is "altering teaching practice to elicit student outcomes". The trial has a thorough grounding in Newman's (1996) Framework for Authentic Pedagogy involving the constructing of knowledge. Newman's approach is consistent with the Piagetian theory presented above with regard to negotiated student outcomes that are expected from increased student "engagement".

The potential classroom consequences of Piaget's hypothesis suggest the need for an individual lesson for each student. This is obviously difficult, even though computerised record keeping may address some of the issues faced by schools such as the difficulties that Runcorn State High School identified with record keeping in the 1970's. This issue of individually paced learning is contained in the *adaptive educational approach* which goes a long way to achieving the ideal state where the individual needs of the students are addressed. Adaptive education utilises a flexible approach to the delivery of education so that students can take various routes to, and time for, learning

(Brophy 1988, Corno & Snow 1986, Wang & Lindvall 1984, 266).

Such an approach is embraced by educators focusing on the

individual student. With this approach, a student works at

his/her individual pace where the curriculum (Here reference

is made to *curriculum* as a course of study, not the lived

experiences of the students as is the case throughout this

study) is delivered at a pace that is tailored to suit each

student. This paradigm is reflected somewhat in the vertical

timetable as well as the curriculum delivery adopted at Woree

State High School for the trial referred to above.

Another vital aspect of learning for learners and those

who prepare and deliver the curriculum is that of learning

mode. Learning mode models are built on the assumptions that

learners differ significantly in the ways they learn, and

understanding these modes can be used to inform the practices

of both teacher and learner. These modes are described in

detail by Keefe (1979). He sees some students as active

learners, participating in group and practical work. Others,

feeling uncomfortable in such a context, seek the role of an

almost passive spectator of a teacher (Stanton 1995,153).

Ideally, a student centred curriculum permits students to

choose the subject offerings that best allow them to adopt

their preferred learning modes. Better flexibility would allow

any subject to be offered utilising a range of delivery modes,

with students able to access the mode best suited to them.

Students could make use of various learning strategies including group work, model making or interviewing, for example. McCarthy (1981) describes three types of learning modes: Students who are described as *visual learners* select subjects where overhead transparencies, videos or other visual materials are used by teachers. On the other hand, learners who are described as *auditory learners* adapt well to lecture type course delivery. Such learners may be attracted to subjects such as Economics or Ancient History particularly when those subjects are taught in lecture-style classes. *Kinaesthetic learners* learn by doing, rather than seeing or listening, and would tend to select subjects such as Physical Education or Manual Arts if they were taught in a manner that provided opportunities for doing. These classes could be taught by lecture or video.

Learners vary in the order in which they wish to acquire their learning (Burke 1995,153). One interpretation of this theory suggests that individual sequences are required for every student. McCarthy (1981) recommends structuring the curriculum so that each unit of study provides some dissonance and some consonance for every learning mode.

Certainly, in a system with increased flexibility, subjects would be offered via a combination of modes. In tension with the press for greater responsiveness to student

needs are system requirements that learners are exposed to a
broad base of common subjects such as English, Mathematics,
Science, Drama and Physical Education. The problem of how to
provide students with a breadth of experience as well as
supporting specialisation through catering for their
particular interests remains an ongoing problem. In some
schools where the vertical timetable commences in Year 9,
there is still a fixed broadly-based curriculum in Year 8.

Theories underpinning learning modes and sequencing are
argued to be important considerations in the implementation of
a vertical timetable. The notion of individual educational
progress sits well with aspects of adaptive education, in
particular macro level adaptive education as outlined by
McInerney and McInerney:

> implementing vertical groupings and semesters,
> providing opportunities for acceleration, IGE, a
> whole school approach, student assumption of
> responsibility for diagnosing present needs and
> abilities, student choice(1998,258).

Issues mapped in this section are clearly important in
any consideration of the individual needs of the students.
New theories of learning warrant consideration as they provide
a basis for thinking about the impact of organisational change
on students. In this researcher's view they ought to be an
important component in the planning, implementation and

management of vertical timetabling.

Implementation variables in curriculum innovation

In this section the literature reviewed includes curriculum development and implementation both of which are regarded as forms of educational change. Aspects of educational change addressed here include: the ownership of change as described by Young (1979), Kimpston (1985) and Dalton (1988), the need for inservicing of the staff, presented by Fullan (1982), Marsh (1984), Musgrave (1979) and Brady and Kennedy (1999) and the necessity for planning Dodd (1980), Fullan & Hargreaves (1991), Fullan and Miles (1992), Leithwood (1982).

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It appears in related literature that, for educational change to be successful, the teachers, usually the focal agents of effecting change, must understand the process, the content and their role in the implementation and maintenance of the change. According to Young (1979,10), change will not occur unless teachers understand that it involves:

> conflict, a rearranging of support and attention, greater expenditure of energy and time, and clear understanding of the expected outcome and worth of the activity.

This observation of Young converges with the notion of Fullan (1991) where he identifies four criteria that teachers

use to assess the change:

1. Does the change address a need - will students learn, and will it work?

2. Does the change make clear what the teacher will actually do?

3. Will the change affect the teachers in terms of time, excitement and competence, and challenge to existing priorities?

4. Will the change produce rewards regarding interaction with peers or others?

Here Young (1979) refers explicitly to "conflict" that he sees to be a necessary part of the change process. Fullan (1991) is more implicit when he noted that change always involves the "challenge to existing priorities" and is only successful if participants can identify the "rewards" that will result. The researcher believes "conflict" in this case to mean disagreement or problem that may be personal or involving others. She feels that this outcome may be somewhat extreme and that Fullan's description is more applicable here. This researcher strongly believes that an informed manager of change will deliver the proposed change to ensure that Fullan's (1991) criteria are addressed, encouraging involvement or ownership on the teachers' behalf. It must be acknowledged that even if the chief agents of change act in informed ways as suggested above, some teachers may continue to resist change. This can occur, as the researcher has

observed, for many reasons, some of which are beyond the sphere of action of the chief agents of change: professional insecurity, fear of the unknown and personal mind set.

Many teachers do not express shared ownership of an innovation because they do not believe in the change and understand their role in the curriculum process (Kimpston 1985, Dalton 1988). Innovators wishing to succeed in the change process should take the time and make the effort to alter the views of the teachers:

> For teachers to implement change successfully, the intent of the change and the implementation process accompanying it must be regarded as both desirable and possible by teachers (Young 1979).

Fullan extends this idea. He advises that "the development of authentic shared vision" (1993,31) is necessary for successful change. Certainly the concept of shared vision and ownership is both desirable and attractive. This researcher asserts that it is incumbent upon change agentry to aim for these goals, raising the key issue of in-servicing.

The need for in-servicing at all stages of the innovation process is expressed in Brady and Kennedy (1999), Marsh (1984), Fullan (1982) and Musgrave (1979). Fullan reports the necessity for pre-service training in effective implementation. Equally as necessary is the need for ongoing maintenance of the innovation to keep the dream alive, a vital

issue to be managed during the change process as noted by informed change agents (Fullan 1993, Fullan & Miles 1993 and Wilenski 1986). An important aspect of this approach is the need to maintain the teachers' currency with up to date and relevant information via clearly established channels (Gibson 1992). Brady and Kennedy (1999,226) underscore the relevance of this matter, referring to the "role of teacher development and its relevance to change". This issue is of particular importance where teachers are mobile (moved from school to school). Processes must be in place to support the teachers when they move into a school where the innovation has been introduced. To deny such support could condemn the curriculum innovation to failure (Gibson 1992). Fullan (1993,113) claims the knowledge gained from in-servicing for teachers is an "elemental, irreducible aspect of teacher empowerment". He dedicates an entire chapter in this book to the ways in which teachers could be better informed during the change process.

Teachers who are new to a school where a recent change has been implemented may not share the vision. Such a situation may reflect negatively on the change. (This position of the teachers could be due to a lack of understanding or knowledge of the change, thus reinforcing the issues presented previously in this section with respect to in-servicing.) Kimpston (1985) describes the stance that may

be adopted in such circumstances of "this is not my task" as a significant barrier to change. Other equally serious obstructions to curriculum change are presented by Print (1986) who identifies a lack of ownership in the process of implementation and Marsh (1988) who describes the lack of principal ownership of the change as a potential problem. Views such as these converge with those of Kimpson (1985) and Dalton (1988) as presented earlier in this chapter. Such notions could be addressed by in-servicing, and, as such, warrant the attention of managers of change.

The success of an innovation may depend on the existence of a plan (Fullan & Hargreaves 1991,Dodd 1980) and whether or not it identifies potential barriers to successful implementation (Dodd 1980). Leithwood (1982) suggests the development of a complete implementation strategy. Fullan and Miles (1992,749-752) list seven basic themes necessary for successful change: change is learning, change is a journey not a blueprint and problems, problems are to be addressed, change is resource hungry, change requires to power to manage it, change is systemic and the fact that large scale change is implemented locally. Attention to such measures as those described by Fullan and Miles, Dodd and Leithwood, when implemented correctly, may ensure the success of a change in the curriculum. (The management of educational change comprises one section of the conceptual framework of this

study. It is discussed fully in Chapter 3.) Such shifts in practice may sound relatively easy, but attitudes are involved and may complicate matters. Writers such as Farrell and Collins (1990) report that there must be sufficient time for teachers to achieve set tasks with regard to the implementation when considered in tandem with day to day teaching responsibilities. The resultant disenchantment, if sufficient time lines are not permitted, could be dispelled by the creation of established processes and the recognition of the need for preparation time for the teachers (Kimpston 1985). Support may also seem to be lacking in the areas of resources, poor organisational arrangements, goals and motivation (Gibson 1992). Lack of such maintenance may impede effective implementation of a change in policy. The researcher strongly supports these theories. She asserts that such knowledge may assist administrators to highlight possible benefits that constitute elements worthy of consideration when contemplating educational change to provide resolutions to a number of issues.

While acknowledging the importance of a plan for change implementation, the researcher draws attention to the timely warning of Fullan (1993,5) that planned change may become the preoccupation of administrators who continue to try to fix the system. Wallace's (1991) finding that, frequently, planning for change does not match the realities and complexities of

the school, further serves to highlight the fact that change

policies should consider such problems. As such, these

notions warrant the attention of change agents.

The literature pertaining to implementation variables in

curriculum innovation highlights the importance of their

consideration when planning educational change. These issues

include the ownership of the change, the need for in-

servicing, and the creation of a plan. It is important for

change leaders to refine such concepts in order to create a

basis for positive change.

The vertical timetable, individual learning and other models of curriculum delivery

Purposeful teaching takes place within some kind of

framework. The same is not necessary for learning, as a great

deal of learning occurs throughout our lives and is

serendipitous in nature. For the purposes of this project,

literature related to the learning that occurs within an

organised structure, the secondary school curriculum, is

examined. In addition, literature related to flexible

learning styles, as advanced by Bourke (1995), is discussed.

The framework for this study brings these ideas together to

allow an analysis of the implementation of a vertical

timetable in eleven schools. One of the important outcomes of

such curriculum delivery is seen in the many individual

academic pathways that develop in this new curriculum space.
Vertical timetabling is not the only means of providing
students with greater individualisation. Before an educational
innovation such as the vertical timetable is adopted,
administrators and change agents must be familiar with
alternate models of curriculum delivery. The topics
highlighted in this section include blocking, split shift
timetables and timetables with different divisions of time.
In this respect, the work of writers such as Allen (1989) and
Carroll (1993) is examined. Several examples of different
models of the school day are also described.

✧   ✧   ✧

Jessop has described learning as a "personal and
individual experience" and that to "standardize" it by
adopting certain modes and time periods is not the most
effective means for a group to achieve a set of learning
outcomes" (1995,33). He maintains that learners need to
manage their own learning experiences in a manner that
recognizes where they start, their preferred learning modes
and the time available. Thus, this *flexible learning approach*
has a broad focus: It is an umbrella term that subsumes a wide
range of innovations in the management of teaching and
learning (Nash 1995,155). The central foci are the meeting of
individual learning needs and giving the learners
responsibility for their own decisions and outcomes.

Such theories have provided fertile ground for those
educators seeking a new paradigm for curriculum delivery. The
idea of an active learner who takes responsibility for his/her
own learning is attractive to all stakeholders in a secondary
school. The concept has become a central concept of the
vertically delivered timetable.

Yet, does this theory translate well into practice? The
individual curriculum pathways that characterise flexible
learning imply that, with such an approach, the students have
more access and choice. The researcher challenges this
notion. She supports Bourke, among others, who sees some
problems with this. He states: "The capacity to make learning
decisions cannot be separated from the level of learning"
(Burke 1995,175). In other words, can it be correctly assumed
that all secondary school students will be capable of making
informed decisions regarding their academic pathways? Tension
results between this key issue of a student centred approach
to learning and the ability of the students to accept and make
use of the flexibility to their best advantage. The question
must also be raised as to whether or not the vertical
timetable, when used as a tool to deliver the curriculum, is
able to enact all desired academic pathways for the students.
As a result, Bourke (1995,174) reports that teachers need to
become involved in more guidance and diagnostic assessment.
Educators consulting the theory of Jessop et al. must be aware

that the move to learner centredness accompanies a move to place more, not less, responsibility on teachers.

Another problematic area was noted in a study of the literature related to independent learning. The difficulty involves the concept of *modulisation* or *unitisation* as described in Chapter 1 with regard to the definition and explanation of the vertical timetable. The unitising of year long courses into meaningful units of subject offerings often occurs without explanation (Young 1995,178). Any change of curriculum organisation needs to be accompanied by rationales and explanations for the break up and combination of areas to be studied.

Although there is a vast amount of literature addressing the theory of learning, there is considerably less material that examines the theories of student centred learning, and some of it has been discussed here. Little theory has been written about the vertical timetable per se. Schools where it has been adopted usually supply a brief explanation in the school handbooks, with the focus on the benefits for the students. Consequently, they are of little import to the educator seeking a balanced view of the overall effects of the vertical timetable and the timetable itself:

> The basic underpinning of this school's VIC
> (vertically inclusive curriculum, vertical

timetable) is flexible, student-centred quality
education. This is achieved by giving students a
curriculum designed to cater for individual needs
and interests. The VIC structure within the school
is founded on the belief that individuals have the
right to maximise their learning potential through
the provision of learning choices that are not
restricted by an inflexible lockstep grading system
(Ryan Catholic Community School Student Handbook
1996).

In some instances the administrators of the school make
use of newsletters, again emphasising the positive aspects,
although one such school newsletter notes that there may be
some "demands" (which, by no means, are unique to the vertical
timetable):

> Acceleration, grade skipping, enrichment and
> mentoring are some of the procedures that meet the
> special needs of boys for whom the normal curriculum
> is not educationally suitable. This will place
> demands on timetable flexibility, staffing and
> resources (Cranbrook Foundation News June 1995).

The Department of School Education in New South Wales has
produced a brief video recording *Rethinking High Schools: A
question of time (u.d.)*, showcasing two models of the vertical
timetable in practice. In the instances cited above, only the
benefits for the students are presented. No reference is
made, apart from the "demands" alluded to in the newsletter,
Cranbrook Foundation News, of any potential difficulties for
the students or the teachers.

In conducting the project, the researcher was able to locate a limited number of academic works that addressed the vertical curriculum in the Australian context or a similar topic. Power (1990) and Evans (1988), in their dissertations, offer descriptions of the introduction of the vertical timetable into secondary schools. They offer limited input to this inquiry as there is no attention paid to the effects experienced by the teachers or the students. Their research provides accounts of the implementations and attend to the management and negotiation of change. O'Neill (1983), on the other hand, provides research that considers the consequences for teachers.

Bury and Hooper (1990), administrators in a secondary school, wrote of their experiences during the introduction of the vertical timetable. The authors address topics including: the unit selection process, record keeping, complementary structures in the school, pastoral care and decision making. These issues are clearly important in the management of the introduction of vertical timetabling.

A useful account of the effects of the vertical timetable is provided by Maxwell, Marshall, Walton and Baker (1989) in their report on the introduction of the vertical timetable in New South Wales non-state secondary schools. Maxwell et al. note advantages for the students. The benefits reported

include more flexible student academic pathways and better student/teacher relationships, although there is no elaboration of this in the report of their research. The authors further report that all members of the school community that was studied viewed the vertical timetable in a positive light. Some significant negative effects for the teachers are noted. The report cites the areas of extra work, lack of continuity as students progressed from unit to unit, resources in short supply and lack of counselling, for example. Some teachers also reported "a slight increase in stress with some increase in administrative workload" (1989,11). The report of Maxwell et al. is a detailed account of the innovation and provides a useful analysis of the key issues.

Similar findings to those identified in the report of Maxwell et al. (1989) are presented in an extensive examination conducted by Scharaschkin and Stoessiger (1987) of the Tasmanian experience with vertical groupings. They report findings that include: "strong support" for unitisation over the previously used system, based on the range of choice and the fact that they could choose (students' views), the provision of short term goals, better student motivation, and scope for more activities (teachers' views). Disadvantages cited by the teachers included extra work and lack of continuity of student/teacher contact (1987,3). This report

and that of Maxwell et al. are two of very few studies which address both advantages and disadvantages of the vertical timetable.

Middleton, Brennan, O'Neill and Wooten (1986) identify several negative aspects of the vertical timetable, noting that such structures may not be "inherently desirable", listing three possible disadvantages for students. These disadvantages are similar to those described by Maxwell et al. (1989), relating to a lack of continuity between units, pressure of deadlines and overspecialisation in certain areas. Middleton et al. (1986) found that the accepted academic considerations of the day were reflected in the school timetables, a reiteration of a theme raised by Middleton four years earlier. Middleton (1982,110) highlighted several problems of the lock-step progression, but Middleton et al. (1986,69) noted potential difficulties with its replacement, the vertical timetable. Again, no consequences for the teachers are discussed, but Middleton's (1982) views converge with some of the findings of Maxwell et al., Scharaschkin and Stoessiger with regard to the vertical timetable, especially in reference to student work and assessment load.

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The learner centred classroom in secondary schools is substantially different from the traditional classroom, and so

is the delivery of the curriculum that occurs there. In a traditional model, the students have six, seven or perhaps eight thirty-five, forty or fifty minute lessons each day. Students rotate through these lessons. Books and other learning resources are retrieved after fifty or so minutes of activity and then the students progress to the next class. Carroll (1993) presented an alternative to this staccato activity: the Copernican Plan where the accepted order of movement is reversed. Timetables increase class time for each subject and allow the student to concentrate on one or two subjects at a time, to improve both instruction and performance (Fogarty 1997,27). Macro classes meet for 226 minutes for 30 days for one subject or half the time for 60 days for two subjects. A move to such a mode of curriculum delivery would signify a shift to a more intense mode of curriculum delivery, rather than the unit of study being spread out over a longer period of time, as is typically the case in secondary schools.

This concept of using blocks of time instead of single lessons is also described by Davies (1969) and English writers such as Vars (1993), Goodman (1984) and Hanson (1972). In the interpretation of such writers, the term *blocking* means the notion of grouping together some subjects so that all the time allocated to each occurs at the same time no matter how this is divided (Allen 1989,112). Such blocking or block

timetabling occurs in many Queensland secondary schools in English, Mathematics and Science in Years 9 and 10. For example, all Year 9 English classes are scheduled at the same time. This approach permits a certain degree of flexibility where students and teachers move between classes without disruption. This form of blocking permits subject areas to vary their organisational practices, making use of team teaching, for example. Other ways of using blocking have been identified, but they are beyond the scope of this report.

Another approach to a more student centred organisation of the school day has been introduced by a large, Queensland regional secondary school. The students attend school from Tuesday to Friday, starting an hour earlier, in a move that will permit the students increased access to work experience, part time work and study, including tertiary subjects. This move to de-institutionalise the school day is made in an attempt to address the changing needs of the students and society and is being contemplated by several other schools, in particular, those schools where vocational certificates are issued (O'Chee 1997,14). This case is by no means the only example of such a change. Other schools have introduced variations of the school day, such as extending the school hours, and rescheduling the teachers' duties over four and not five days as in a typical school week.

Another secondary school, in an attempt to better address the needs of the students, has adopted an approach whereby Year 8 classes will be taught English, Mathematics, Science and Social Science by the one teacher. This re-organisation will extend to Year 9 and 10 within three years. Students will spend up to four hours per day with this teacher and perform projects that are interdisciplinary (O'Chee 1997,3). This approach has many similarities to Carroll's Copernican Plan (1993).

In Chapter 1 the expanding role of Voc Ed subjects in many schools was outlined. School-industry programs have emerged as important innovations in secondary schools. Courses such as *Catering and Hospitality* and *Construction Fitout and Finish* were designed to meet the needs of particular students. These units of study aim to provide "learning about the world of work" and "employment related skills" (Ainley & Fleming 1996,66). In many schools offering these subjects, the delivery of the timetable has been altered to suit industry needs. Schools such as the one described above are moving away from the traditional 9a.m. til 3p.m. day in order to address the needs of some students and industries.

Another model of curriculum delivery has been introduced in several Queensland secondary schools after being observed to work successfully in schools in NSW and Victoria; the split

shift plan.   By adopting this model, the schools are

organised in two sessions: Years 8,9 and 10 attend classes

from 10.30a.m. to 4.15p.m., while Years 11 and 12 attend from

7.30a.m. until 1p.m.   The move will allow the students better

access to specialised equipment and facilities, permitting

more students to study subjects that utilise this equipment.

The three alternative models discussed here present

advantages for the students by offering a more effective use

of the school day.   Knowledge and experience of such

innovations will underscore the benefits of various

possibilities with respect to curriculum delivery.   The

creation of models such as those outlined above echoes a move

in the US as reported by Anderson (1994).   A National

Commission presented a report on *Alternative Approaches to*

Organizing the School Day and Year.   The report refers to new

societal demands on schools as well as those from education

reformists (Anderson 1994,9).   Schools have reacted by varying

the way in which time is used for learning.   Innovations

reported by Anderson include: an extended academic day to

allow time for extra learning opportunities and support for

social needs, an extended school year for the same reasons,

year round schools where extra classes are conducted during

the longer vacations, and of significance with regard to this

inquiry, a re-organised school day where:

the length of the learning experience is based on
student needs or curriculum demands i.e. block
scheduling (Anderson 1994,10).

There are several alternate models of curriculum
organisation worthy of consideration by schools interested in
developing a more student centred curriculum. In most of the
approaches noted here, the needs of the students constitute
the focus, and educators are responding by delivering subjects
in innovative ways, especially with regard to time frames.
This is particularly the case for the increasing numbers of
schools which are embracing Voc Ed subjects to assist students
to become better out-of-school learners. Such variations from
the typical school day and mode of curriculum delivery have
been cited to illustrate moves to offer a more effective use
of the time to accommodate the needs of the students, in
particular, with respect to the school-industry programs
contained in the Voc Ed subjects. Each of these issues is
significant for the realisation of a more student centred
curriculum.

The effects of educational change on teachers

As stated in the research question posed in Chapter 1,
this inquiry is seeking to identify the outcomes of the
introduction of the vertical timetable for the members of the
schools' communities. In this respect, this review now

considers the literature concerned with the effect of educational change on teachers. This section draws on the work of Durkheim (1893,1897) with regard to the psychological condition of anomie as well as the ideas of writers such as Mayo (1933) and Hagstrom (1964) on the same subject. The researcher then moves on to review examples of contemporary issues of anomie in the workplace that can be used to highlight the outcomes for some teachers. Each of these issues is significant with regard to the research question, and therefore warrants attention by managers of educational change.

Fullan and Stiegelbauer (1991), when investigating the effects of educational change, describe results similar to those identified in the first stage of the preliminary study (see Drewett 1995a). These include the fact that teachers already have a great deal with which to contend, and, as a result, their work can sometimes be stressful because change usually involves more tension. Fullan (1992) identifies teacher stress arising from the overload of work that accompanies many changes in educational practice. Fullan's work (1992) is therefore of interest to those educators and others considering an educational initiative such as the vertical timetable.

Fullan and Miles (1992,749) identify teachers' problems associated with the educational change process in schools. The authors maintain that "anxieties, difficulties and uncertainties are intrinsic to all successful change". Hargreaves (1994) and Fullan (1993) strongly support this issue and note that teachers are compelled to accept change, and, as a result, they frequently feel powerless and it becomes "one damned thing after another" (Baker, Curtis & Benenson 1991). Hargreaves describes "teaching in times of rapid and far-reaching change" (1994,xiv) as particularly problematic. Fullan (1991) provides data from his investigation into the effects of educational change on teachers (see earlier this chapter). He identifies on-going staff development as a necessary partner for any educational innovation. Fullan does not address however, what happens to the teachers during and after the introduction of an innovation if staff development does not occur, or falls short of its objective. This issue emerged in the second stage of the preliminary study (see Drewett 1995b).

The notion of educational change and its ramifications for teachers is now refined to focus on the psychological effects of change in the workforce. The psychological phenomenon of *anomie* was originally defined by Durkheim (1893). He identified anomie as a condition arising when, at times of abrupt transition, society seems incapable of

exercising its authority. A collective feeling of anomie results. Durkheim referred first to the "anomic division of labour" (1893) and later to the anomie resulting from the lack of specified social ends of action (1897). His work suggests that people have only limited tolerance for poorly defined situations. This has been seen by Kahn and Quinn (1964) and La Rocco, House and French (1980) to infer that workers have a 'need' for an absence of role ambiguity and a need for supportive group structures. This concept was furthered by Merton (1938a) as a specific imbalance where cultural goals, such as financial aspirations, are overemphasised at the expense of institutional means. Merton sees the resultant feeling of anomie or powerlessness as a normal response to the pressures created by society. Marx (1844) describes the drives shaped by society and the needs for survival and security. He further comments on the way one needs to have control over "one's productive life and life situation" (Marx 1844), and the consequences if this does not occur. Orru (1987) presents the situation in a more contemporary context, describing the anomie that is felt by many in society if one is not successful in the pursuit of monetary gain or success, for example. The issues with regard to anomie as identified by Durkheim, Merton, Kahn et al., La Rocco et al. and Orru are central to one of the dominant themes of this thesis. As such, it is suggested that managers of change consider the issues presented.

Other authors apply the theory of Durkheim's anomie directly to today's work place. Mayo (1933) describes the anomie experienced by mental health workers when working with those in need. He reports the way psychologists experienced feelings of anomie when faced with stressful situations that were beyond their control. Hargens and Kelly-Wilson (1994) identify and describe the anomie experienced by a group of academics who reported feelings of isolation as a consequence of the academic areas in which they specialised. Hagstrom (1964) investigates the anomie felt by some mathematicians who experience "academic pessimism" regarding the worth of their individual specialised areas. Crank, Regoli, Hewitt and Culbertson (1995) refer to similar descriptions of Police executives who experienced anxiety. In this project the condition resulted from the officers having to reprimand their immediate subordinates and the conflict that arose between their loyalty to the other officers, and that owed to the Police Force. These writers share the view that anomie often results when there are no clear normative guides to direct individual behaviour.

Similar explanations to those above are offered by Merton (1938b) and Orford (1994). These writers see anomie as a normal response to the pressures of society where the goals are clearly defined but the means to achieve them are not so well defined. The interpretations of Merton and Orford

support those of Fullan and Miles (1992). These two authors believe that the psychological consequences experienced during a period of change in schools are "intrinsic to all successful change" (1992,749).

The literature discussed in this section invites an appropriate definition of stress:

> Stress is a state of unpleasant emotional tension engendered in individuals when they feel unable to satisfy their needs within their situation of action (Barrabee & Von Mering 1953,50).

This is furthered by Levi with direct relevance to this inquiry:

> Occupational stress arises where discrepancies exist between occupational demands and opportunities on the one hand and the worker's capacities, needs and expectations on the other (Levi 1979,26).

From these definitions, stress is seen to arise from the interaction of a person in a situation which is not conducive to the person's needs, or fails to meet individual expectations or represents demands which overtax resources (Otto 1983,2). The literature here highlights the ways stress may be manifested in the workplace where uncertainties could result from change.

Cherniss (1980) and Maslach and Jackson (1981) studied workplace stress in human service fields. The findings of

these projects underscore certain of the findings of this study: powerlessness and isolation. Knobloch and Goldstein (1971) observed that teachers can experience isolation. These authors report that this has been described by both teachers' peers and society at large. Marciano (1987,18) describes this environment for the teachers as "socially estranged". The stress described by such authors is an important issue in this inquiry and warrants consideration by change agents.

The themes of powerlessness and isolation, as they were identified in the preliminary studies (see Drewett 1995a,b) invite further analysis. Rogers (1992,8) and Phillips and Lee (1980) refer to the powerlessness frequently experienced by teachers during times of educational change. These observations of Rogers were made in the Australian context. They support the findings of the Joint Committee of Inquiry into Teacher Stress (Department of Education, W.A. 1987,3) where 40% of the teachers were identified as experiencing psychological stress, and 18% were classified as experiencing "severe psychological stress". Pre-empting these findings, Bentley (1984) referred to a similar investigation in New South Wales' schools where curriculum change was identified as one of the causes of "occupational stress for teachers" (1984,49). Observations made regarding Canadian and Swedish contexts (Otto 1983,5) indicate that teachers in those countries have been found to be "under more stress than

company executives". British studies make similar inferences (Pratt 1978, Kyriacou 1980a) where 79% of teachers and only 38% of semi-professionals mention work as a source of stress. Such observations underline the importance of this issue and the relevance of this study.

Rogers (1992), like Hargreaves (1994) and Bentley (1984), links the concepts of the changing role of teaching with teacher stress. He describes the many changes and demands that teachers are compelled to accept. These authors refer to the mandatory acceptance of change expected of teachers, whereby they accept the implementation of any change, again underscoring a central theme in this thesis. In some cases, the teachers may be paying 'lip service' to the acceptance of the change, resulting in a 'pseudo change' as is indicated by some researchers (Darling-Hammond 1993,757).

It must be noted that none of the authors discussed above details how *stress* was exhibited by the teachers. In addition, no definition of the condition was presented. Thus it has been assumed that the stress involved the commonly accepted broad condition involving fatigue, anxiety, nausea and undue concern.

A Metropolitan Life Insurance poll, in the American context, found that teachers experience more stress than most

other Americans. In the poll, 36% of teachers reported experiencing stress "several days a week or more" compared with 27% of the population as a whole (Metropolitan Life Survey 1985). This is comparable with 40% of teachers in the West Australian Inquiry who reported the condition. No reference is made to the causes of the stress: student behaviour, local conditions or curriculum changes for example.

Maslach and Jackson (1981) developed methods to quantify the degree to which employees (such as teachers) feel stress. No literature addressing applications of the Maslach and Jackson measure in the education context could be located, despite what the researcher sees as the inevitable correlation between educational change and teacher stress. The dearth of theory in this area suggests that research is needed to fully inform the practices of potential innovators.

The researcher supports Fullan's (1991) belief that: "Teachers get the worst of both worlds when an innovation is introduced, as benefits are often low, and their own personal costs are high" is somewhat of an exaggeration. Certainly the costs for the teachers are high.

The situations noted above agree with the findings of Fullan (1982,1991). The author identifies student and teacher ownership of a change in practice that arises from

consultation with them during the change process. This

observation supports the findings of Musgrave (1979) who has

emphasised the role of peer consultants in developing

ownership and support for innovations. The sharing of

experiences (Deer & Thompson 1987) and the results of

professional isolation (Reid 1986, Otto 1983) support the

necessity of collegial support. Otto (1983) describes the way

teachers may bear their stress in isolation, reluctant to

discuss their problems because they fear the difficulties may

lie within themselves (Otto 1983,7). Collegial support, the

concept of ownership of the innovation, the processes of

consultation and collaboration, for example, are issues that

could become relevant during the change process. The

initiatives may occur at school, district, state or even

national level.

A leader would be well informed by Fullan and

Hargreaves's (1991) twelve guidelines for teachers that will

create a new mindset. A wise change agent would share these

ideas with the teachers, just as he/she would personally adopt

the eight points of advice the authors offer principals or

leaders of change (Fullan & Hargreaves 1991). Fullan (1991)

also suggests further guidelines relating to change. Change

managers need to know that there is advice, albeit somewhat

limited in volume, for innovators wishing to create a context

that will encourage positive change. It is an aim of this

project to complement and add to, while at times challenging, the current body of literature addressing this topic.

$$\diamond \quad \diamond \quad \diamond$$

In this chapter literature relating to the theories of learning literature was reviewed. Other works pertaining to the implementation variables in curriculum innovation were examined. Other literature examined related to the analysis of educational change, its implications and results. The broad area of the literature consulted to inform the investigation was that of educational change as described by authors such as Fullan (1982,1991,1992), Fullan and Steigelbauer (1991) and Hargreaves (1994). Literature relating to the psychological effects on workers was examined. Issues highlighted by Marx 1844), Durkheim (1893), Merton (1938a) were reviewed. These matters were narrowed to the psychological effects of stress and change on teachers. Authors reviewed included Fullan (1982,1991), Reid (1986), Deer and Thompson (1987), Rogers (1992) and Darling-Hammond (1993). Issues relating to the vertical timetable and associated areas in the Australian context were explored. What now follows in Chapter 3, *The Conceptual Framework*, is an investigation of the elements that helped frame this inquiry.

Chapter 3

The Conceptual Framework

A teacher affects eternity; he can never tell where his influence stops.

Henry Adams

This chapter locates the major concepts that frame the study. There are three key aspects: the management of educational change; the significance of the structure of a school's timetable; and the construction of curriculum.

The management of educational change is the first key aspect. As discussed in Chapter 1, this study is focused on the introduction of the vertical timetable into several secondary schools. In this chapter the issue of the management of this initiative is examined. The works of Darling-Hammond (1993), Fullan (1993), Fullan and Miles (1992), Kotter (1995) and Wilenski (1986) have been drawn upon.

With respect to the structure of the school timetable, the second aspect of the framing of the study, the work of the following authors has been utilised: Allen (1989), Ball (1981), Davies (1969), Ellam (1986), Goodman (1984), Hanson (1972), Hargreaves (1984), King (1983), Maxwell (1985), Middleton (1982), Salt (1978), Vars (1993) and Warwick (1974). Allen's work is drawn on to outline the significance of the structure of the school's timetable. Allen's work is critical in providing insights into the messages inherent in the method

of delivery of the school curriculum. The work of Brady and Kennedy (1999) is important when considering curriculum change and the way a school's curriculum is constructed, the third key aspect of the framing of the inquiry. Brady and Kennedy (1999) identify four stages in the preparation of curriculum: firstly, consideration of the interests of the stakeholders; secondly, choice of a model to use as a basis; thirdly, identification of the substantive elements of the design; and finally, selection of the delivery mode (timetable) of the curriculum. The perspectives that these works provide that are relevant to this study are synthesised to assist in framing the study.

The significance of the construction of the curriculum is very much linked to the management of change. Key elements are related to the structure of the timetable: the ways in which the school curriculum is delivered to best address the needs of those for whom the curriculum is developed, the students. The three components of the framing of this inquiry are clearly interrelated. Each of these issues is significant when attempting to better understand the effects of the introduction of the vertical timetable - the focus of this study. An understanding of these components of educational change helps make sense of the ways in which agents of change may be able to capitalise on the advantages and minimise the barriers for those involved.

It was not possible to understand all facets of the change and so some refining was needed to sharpen the focus of the study. The three areas outlined above were chosen as they were highlighted by the literature review. The literature concerning curriculum change suggests that such change involves learning and this, in turn, involves coming to an understanding of something new (Fullan & Miles 1992). Other literature highlights the steps involved in transforming an institution (Kotter 1995, Fullan & Miles 1992). Secondly, the literature clearly places an emphasis on the messages, both intentional and unintentional that are contained in the school timetable (Allen 1989). King (1983) also argues that the timetable is more than an organisational device for getting the right people in the right place at the right time, further underscoring the significance of the structure of the school timetable. The third key area identified by the literature review is that of the construction of the curriculum. Authors such as Brady and Kennedy (1999) provide models of curriculum development and the importance of addressing the needs of stakeholders. Directly relevant here are the ideas of Darling-Hammond (1992) and Fullan and Miles (1992) with respect to the various needs of the individual students and the role of the schools to address them.

What now follows is a framework derived from the literature and employed to shape the data collection tools.

The management of change

The literature (examined below), suggests that teachers would need to be encouraged by the managers of change in the school setting to maintain open and responsive minds. It further suggests that without such a mind set, the risk of failure would be high. Stakeholders could become defensive and even resentful, with ultimately successful implementation unlikely. Many reformers refer glibly to "knowledge of the change process" as vital, which it is, but there is more. As for example, Kotter (1995) argues his eight steps to transforming an institution (see Appendix 1):

1. Establishing a sense of urgency;

2. Forming a powerful guiding coalition;

3. Creating vision;

4. Communicating the vision;

5. Empowering others to act on the vision;

6. Planning for and creating short term wins;

7. Consolidating improvements and producing still more change;

8. Instituting new approaches.

(Harvard Business Review March-April 1995)

Similarly Fullan and Miles (1992, 749-752) list seven stages to achieve this: change is learning; change is a journey not a blueprint and problems; problems are to be addressed; change is resource hungry; change requires power to manage it; change is systemic; large scale change is implemented locally.

Fullan and Miles (1992,794) note: "The first proposition for success, then, is to understand that all change involves learning and that all learning involves coming to understand and be good at something new." The researcher sought to discover if the participants fully understood the notion of change and what it involved. The question: *What do you understand by the term "vertical timetable?* sought to find out if the movers of change had involved the participants in a way that they gained knowledge from the experience. This question was designed to gauge if/not the participants had come to a greater understanding of the term *vertical timetable* by participating in the change process. Responses could contain references to various definitions and explanations frequently contained in school handbooks. The replies may reflect the degree to which managers of change had discussed the change with the stakeholders and involved them in the decision-making. Fullan and Miles (1992) suggest that those respondents who presented definitive and exact explanations had been involved to a reasonable degree in discussions and deliberations with the change agents, or had gained the knowledge by personal endeavour. Consequently, learning, as indicated by the authors has taken place. On the other hand, those explanations that were vague and barely comprehensible reflected limited involvement or understanding. Here such learning as described by Fullan and Miles has not occurred.

To further explore understandings around the change that was studied the researcher was interested in the participants' understanding of the reasons for the change. Consequently questions were asked such as: *What are the differences between a vertical timetable and the horizontally delivered curriculum?* Kotter argues that successful change involves creating a vision and communicating the vision (1995). In this respect the questionnaire included a question to ascertain teacher perceptions of the advantages of the vertical timetable and perhaps some weaknesses of the traditional delivery method. The researcher also sought responses describing levels of subject offerings in the vertical timetable compared with that of year groupings with the traditional horizontal timetable. Again she was seeking responses that would indicate where the movers of change had succeeded in sharing the vision of the vertical timetable in a manner that engaged the support of the respondents.

According to Fullan (1993,4), in order to successfully manage change, the moral dimension must be considered by the managers of change. Here the researcher was alerted to the notion that the change agency and the moral dimension are complementary and generative:

> To become expert in the dynamics of change,
> educators - administrators and teachers alike - must
> become skilled change agents. If they do become

skilled agents with moral purpose, educators will
make a difference in the lives of the students from
all backgrounds, and by so doing help produce
greater capacity in society to cope with change.

Here the participants' various understandings of the potential

benefits of the vertically delivered curriculum and their

involvement in achieving these ends were sought. The

researcher wanted to identify the ways in which schools were

using the vertical timetable to adapt to the new, evolving

demands of society. This aspect of the framework is informed

by the work of Fullan and Miles' (1992,752) who assert:

"Modern societies are facing terrible problems, and education

reform is seen as a major force of hope for solving them", and

Darling-Hammond (1993) who argues with respect to the changing

roles of schools:

> "There is little room in today's society for those who
> cannot manage complexity, find and use resources, and,
> continually learn new technologies, approaches and
> occupations".

This perspective on a moral dimension was viewed as a key

issue as it involved new ways in which to best meet the needs

of the students by preparing them for life in a rapidly

changing and evolving society. This issue was explored with

such questions as: *Why did your school decide to introduce the*

vertical timetable?

In response to such a question, comments were sought

describing student-centred advantages that may include

increased flexibility and curriculum choice. Replies were sought that could possibly reflect the considerations schools were attributing to the various expectations of them by the stakeholders. It was hoped to elicit student responses describing work experiences with formal education and those of educators referring to issues related to life and career experiences. Such replies would reflect the changing roles of schools as described by Darling-Hammond (1993), Fullan (1993) and Fullan and Miles (1992).

The forward looking paper, *The next decade* (Education Queensland 1999), is a discussion about the future of Queensland state schools. This document further underscores the moral issue with the query: "If we don't invest heavily in the people to manage the outcomes of technological change, will we be able to control the process of change?" (Education Queensland 1999,9).

Fullan and Miles (1992) argue that successful change necessitates a mission, objectives and a series of tasks defined in advance. Thus it can be contended that the introduction of a vertically delivered timetable incorporates setting new directions and goals for schools. From personal observation, the researcher maintains that the notion whereby students select individual academic pathways is considered a groundbreaking shift in curriculum delivery by many educators

who view this practice as a new and perhaps daunting change. Consequently the role of setting such a challenge and achieving it is vital and must be part of any management of change. Often the key position in this operation is adopted by an administrator, usually a deputy principal. The question: *Who is responsible for the daily maintenance/implementation of the vertical timetable?* sought to identify the nominated teacher responsible for managing the day-to-day aspects of the change.

As Fullan (1993) has argued the management of change as pivotal in the process. Consequently the role of manager requires a high level of sensitivity and may relate to the needs of the other members of the school community. As Fullan and Miles (1992) argue the management of the relationships between the interested parties involved in the change becomes an important consideration. Such ideas parallel those of the researcher whose experience indicates that such a person may be required to be many things to many people. As a result the chief agent of change should be selected accordingly because, without this consideration, the potentially successful innovation may ultimately fail.

Fullan (1993) sees the role of change manager involving: personal vision building, inquiry, mastery and collaboration. He argues that each of these qualities has an institutional

parallel: shared vision building, organisational structures, norms and practices of inquiry. These collaborative endeavours may come at a price, an observation also made by Fullan and Miles (1992): "Staff collaboration takes much time and energy to develop, yet it can disappear overnight." A key question that sought to identify the participants' involvement with the introduction of the vertical timetable was formulated: *How did the Administration involve you in the introduction of the vertical timetable?* Here a wide range of replies was sought, from opinions and discussion between the parties, to the other end of the spectrum where there was little or no dialogue between the movers of the change and the teachers.

On the other hand the pre-disposition of those being involved in the change warrants consideration. Fullan (1993) notes that: "The individual educator is the critical starting point because the leverage for change can be greater through the efforts of individuals." This observation is elaborated by Wilenski (1986) as he enumerated five levers of change:

1. Enactment of new legislation;

2. Creation of a new institution;

3. Recruitment of new people;

4. Changes in formal processes;

5. Changes in organisational processes.

These change levers converge with many of the steps to

organisational change (Kotter 1995)outline earlier and those presented here of Fullan and Miles (1992).

The significance of the structure of the school timetable

While management of change is a critical consideration in any educational innovation, what also matters in terms of the change is an understanding of its implementation. Changing the structure of a timetable may seem a banal administrative exercise. But like all "systems" in schools, as in any organisation, the structures serve to convey messages about the world (Allen 1989). Allen's work describes the significance of the structure of the school timetable. He analyses the messages, both conscious and unconscious, that are inherent and subsequently transmitted by the way in which the school delivers subjects to the students. These messages are seen as important and relevant as the researcher attempted to make sense of the changes effected by the introduction of the vertical timetable.

One meaning of *timetable* is the organisation of the school day. As such, it has been stated by various writers (Allen 1989, Maxwell 1985, Middleton 1982) that there are several such possible mechanisms that can be adopted by an administrator; such methods include the traditional horizontal timetable, the vertical timetable, a combination of both methods or perhaps, in very small schools, the family unit

timetable. Each separate organisational device dictates the allocation of staff to classes, classes to rooms and facilities, for instance. The timetable reflects the priorities of the school, thus, by making *The Study of Computers* a core subject in years 8 to 10, it is understood that the school identifies this course of study as an integral part of each student's academic life. Such decisions indicate the philosophy or educational policies of the school as well as being a resource allocating mechanism (Ellam 1986). The researcher sought accounts of each of the four groups of participants in order to better understand what were the curriculum priorities in each school from their standpoints. For instance, in the example above of a core subject, students may reflect negatively on the existence of what may appear as another 'compulsory subject', while the teachers comment on the relevance to all areas of study and future life experiences contained in *The Study of Computers*. Administrators may report limitations regarding the allocation of associated resources and teaching areas. The range of replies is seen by the researcher as necessary when seeking to understand the impact of the vertical timetable on the entire school community.

King (1983) argues that the timetable is more than a device for getting students and teachers together in the right place at the right time; for instance, he argues that it

dictates patterns of behaviour in terms of who teaches what, to whom, where and for how long. A key question was: *How does the vertical timetable affect you?* Here, again, responses were sought from the four cohorts of respondents. For instance, experience suggested that the students would be likely to comment on the matter of subject selection. The Board of Senior Secondary School Subjects (BSSSS) views the decisions behind the content and structure of the school timetable as important because they dictate the students' subject selection. An example of this is seen with core subjects such as *The Study of Computers* as noted before. Such a decision reflects the school's priority for the subject. The BSSSS describes the school timetable as indicating:

> the philosophies and priorities of the school, the chosen curriculum offered to the students, and the resources available to teach the curriculum (1998,22).

With respect to the students, comments were sought that were on a functional level. Schools utilising the vertical timetable do not acknowledge the concept of Year 9 English as the mandatory English subject for students in Year 9, for instance. They may replace it with *She's Alright Vegemite!*, *Over to you!* or *Far out, Brussel Sprout!* These subjects are graded according to level of difficulty and are available to be selected by students based on their past levels of

achievement. The researcher sought comments with respect to the students' perceptions of such unit offerings. The students may have seen limitations imposed on them by virtue of the unit which they study. Ball (1981,36-37) saw that these drawbacks may be observed in the social identity ascribed to the student because he/she studied a particular unit.

In a similar way, Hargreaves (1984) observes the effects with respect to teachers allocated to teach a particular unit. He asserts that the process affects the teacher's sense of his/her own competence (Hargreaves 1984,102). The researcher was interested in arriving at an understanding of such reports. Teachers' comments on the priority afforded their particular teaching areas were sought. The size and frequency of the slices of time allocated to subjects can create a hierarchy with regard to the importance of different subjects in the eyes of both the teachers and students (Allen 1989,27). This view is supported by Shaw who observes that the timetable "defines explicitly not merely the work relations, but the relations of power and prestige, the rights, duties and privileges of the staff" (Shaw 1972,52). This idea reflects the fact that in secondary schools, most teachers are known to the students by the subjects they teach, thus the timetable is responsible, in some way, for defining who a teacher is (Warwick 1974,100).

To understand the administrator's point of view, the researcher sought comments regarding the structure of and ideologies contained in the school timetable. Allen (1989,210) suggests that the school timetable is a vehicle for transmitting school philosophy and organisational policies. The choices for the timetable structure in Queensland secondary schools are within broad parameters suggested by the requirements of the curriculum and the absence of slack (free time) for students (Allen 1989,210). The hours during which secondary schools are permitted to operate have been extended in recent years. This permits greater curriculum flexibility, thus there are a number of ways and greater time allowances to organise different experiences within the curriculum for the students. These include block timetabling (Hanson 1972, Goodman 1984, Vars 1993) or subject blocking or blocking within faculties (Salt 1978).

The two models of curriculum delivery mentioned directly above allow different time provisions for separate areas of knowledge, whereas the flexibility afforded by the vertical timetable maximises the freedom of the students to select subject offerings, where all curriculums are seen as being interchangeable (Allan 1989, Hanson 1972), with parity of esteem. It has been noted by writers such as Davies (1969) and Ellam (1986) that timetable structures affect the allocation of resources in a school, namely teacher time and

teaching space and, ultimately, physical resources as well.
Both Davies and Ellam present paradigms for the systematic
study of timetables with regard to the implicit allocation of
resources. As such, they are drawn upon to assist in the
framing of this study.

Construction of curriculum

Rearranging the curriculum from the horizontal to a vertical
method of delivery, as argued here, is not merely an
administrative move. It is a re-construction of curriculum.
Brady and Kennedy (1999) refer to the four stages involved in
development of curriculum. The initial stage involves
considering the interests of the various stakeholders. First
and foremost are the needs of students: "The school curriculum
must be able to meet their aspirations and take into account
the changing cultural standards from the perspectives of the
students themselves" (Brady & Kennedy 1999,6). Other sections
of the community also have interests: teachers, governments,
business communities, universities and other agencies of
further education and community groups. In constructing the
curriculum the needs of all these groups must be regarded.
Consequently, when an educational change that pertains to the
organisation of curriculum delivery is instigated, there are
often numerous advocates of issues and causes to consider.
Brady and Kennedy (1999) emphasise the pertinence of such
matters. The question/s: *How were the students*

advantaged/disadvantaged by the vertical timetable? was

included to map the views of the various stakeholders.

Darling-Hammond (1992), Fullan (1993) and Fullan and

Miles (1992) identify the changing roles of schools in

society, drawing attention in particular, to the need to

provide multiple curriculum pathways that address the

differing needs of students. This issue is reflected in many

schools with regard to traditional and Vocational Education

pathways (see Chapter 1). With Voc Ed currently receiving

priority in many education systems, including Queensland, the

importance of providing the students with choice cannot be

ignored.

Once the interests of the stakeholders have been

considered, curriculum developers progress to the second

stage: selecting and adopting a planning model. Brady and

Kennedy (1999, 97-104) describe three models frequently used

to generate a curriculum: the objectives model, the

interaction model and the naturalistic model. Sometimes

combinations of the three variations are used, depending on

the individual circumstances of the school.

The third stage of curriculum construction is to identify

the four substantive elements (Brady & Kennedy 1999,109-125).

Once the model has been chosen, the issues of objectives,

content, method and assessment are addressed. These decisions are made in regard to the context in which the curriculum will be delivered.

Once the curriculum has been prepared, the final decisions are then made in relation to delivery, often without regard to the messages contained in the mechanics of the timetable as identified earlier by Allen (1989) and others in this section. At this point it is clear that the three broad elements that contribute to the conceptual framework of this study can be seen to be inter-related. The managers of the change must conference with the timetable planners to ensure that the new curriculum is developed and delivered in a way that will permit the students to make choices that will prepare them for further academic pursuits or teach them the skills that will assist them to lead useful and rewarding lives.

Brady and Kennedy's (1999, 104) believe that teachers have an interest in curriculum construction. The question: *How were the teachers advantaged/disadvantaged by the vertical timetable?* was intended to elicit responses about issues that were advantageous for the students. Other responses sought may have included personal gains such as greater contact with a larger number of students. Some negative responses were anticipated including concerns including more administration

and assessment matters to be regarded. Thus wider reading on the topic of psychological anomie was required in order to better understand such effects. This slight shift in focus was not as wide as the researcher first feared, as she was able to draw, in part, on the ideas of Fullan and Miles (1992) with their descriptions of "anxieties, difficulties and uncertainties" that teachers may experience in times of change.

The conceptual foundation discussed here focuses on three aspects: management of educational change; significance of the structure of the school timetable and curriculum construction. In the process of identifying these aspects of the framing of the inquiry, the researcher was informed by major debates including the manner in which the change agents can be empowered, options with the structure of the timetable and the inherent messages it may contain, and the steps to constructing a curriculum. These notions helped make sense of the responses of the participants and arrive at a better understanding of the effects on members of the school community of the vertical timetable. Taken together, the change or innovation under study can be understood as *learning*: learning by all of the participants involved in the making of the innovation in each school. Management of the change can be seen as learning by both managers and those with other roles in the change. School timetables, as argued, are

more than an allocation of time, space and resources. They carry implicit messages about what is and not important. Knowledge and understandings of this aspect of the change is clearly important in terms of building a picture of the mind set involved. Framing the innovation as a curriculum construction process allows the analysis to focus on those understandings and perhaps new learnings which relate to the issue described above. While in one sense it is obvious that any innovation might be framed as a series of learnings, the argument made in this chapter underlines the importance of such learnings as necessary, pre-conditions for successful change. So the focus of this research is learning, learning understood in terms of the existing and new understandings of the implementation of vertical timetabling.

The next chapter *Methodology and Research Design* will describe the research plan and a review of literature associated with the methodological procedures used.

Chapter 4

Methodology and Design

Daring ideas are like chessmen moved forward. They may be beaten, but they may start a winning game.

Johann Wolfgang von Goethe

This chapter describes the design of the study, the
selection of participants and the sampling associated with
data collection. Issues relating to the ethical conduct of the
study are detailed and the manner in which the data were
analysed is described.

Design of the project

In this section of the chapter, an overview of the
research will be described (see Figure 5). This includes the
two preliminary studies which provided early data that proved
useful in framing the main study and in helping think through
the conceptualisation of the research. The main study will
then be discussed, including the two data gathering tools:
questionnaires and focus group discussions. The researcher
will explain the sample, and the way in which the participants
were selected. Following this, the ethical considerations
conducted during this inquiry will be outlined.

Figure 5
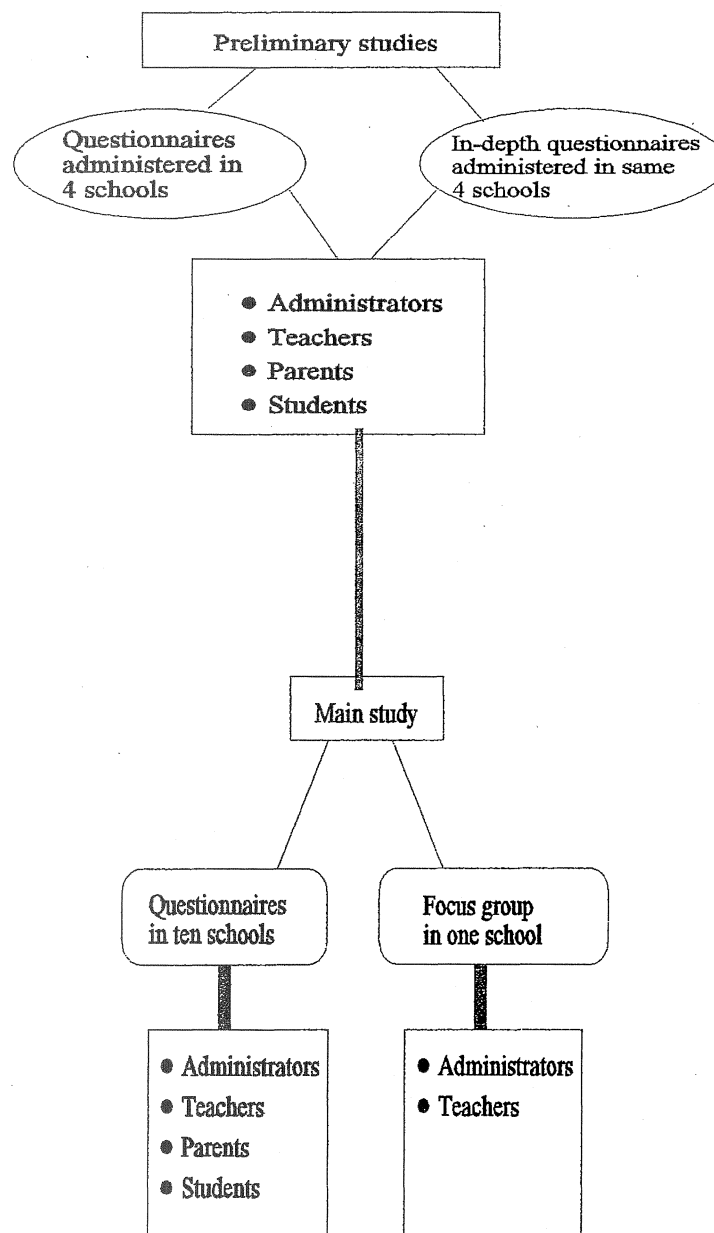
Design of the Project

This investigation comprised four stages:

- Preliminary Study 1

- Preliminary Study 2

- Main Study: Data gathering using questionnaires

- Main Study: Data gathering using Focus Group investigation

The Preliminary Studies

Preliminary Study 1

A group of eleven participating schools was chosen; The names of the schools were coded and these identifying codes were maintained throughout all stages of the inquiry. Preliminary Study 1 was conducted in four of the participating schools, numbers 5, 6, 8, 10 in February and March 1995. The data collection stage began following approval of the project proposal by the ethics committee of Central Queensland University. The four schools were selected as they were conveniently located and the school co-ordinators of this project had agreed to participate. Initially, there had been another two schools in the group, but their interest and co-operation waned, so they were not included in the study.

There were four groups of participants in each school, and each school was sent one questionnaire for an administrator (Appendix C), three for teachers (Appendix D),

three for students (Appendix E) and three for the
parent/guardians (Appendix F). The number of questionnaires
that were completed and returned is detailed in Table 1. The
number of responses exceeded the number of questionnaires
distributed when the documents were copied in the schools
where more participants expressed interest. The response rate
for this first stage of the project was 57.5%.

Table 1

Preliminary Study 1

February/March 1995

Number of schools: 4 (Codes 5,6,8,10)

Questionnaires returned:

Code	Admin-istration	Teachers	Students	Parents
5	1	2	–	–
6	1	3	4	5
8	1	3	–	–
10	1	–	1	1

Table 1: Returned surveys by schools.

Preliminary Study 2

Preliminary Study 2 was conducted in six schools in July
and August 1995. The schools were selected randomly from
those in the group of participating schools. Six schools were

chosen. The schools were coded as 3,4,5,6,8 and 10. One questionnaire was completed by all participants (Appendix G). Each school received four identical questionnaires, with the instruction to distribute one to a member of each of the four groups; administrators, teachers, parents/carers, students. Each participant completed 1 questionnaire. The response rate was 45.8%, as indicated in Table 2.

Table 2

Preliminary Study 2

July/August 1995

Number of schools: 6 (Codes 3,4,5,6,8,10)

Questionnaires returned:

Code	Admin-istration	Teachers	Students	Parents
3	–	1	1	1
4	1	–	–	–
5	1	–	1	–
6	1	1	–	–
8	–	1	–	–
10	1	1	–	–

Table 2: Number of responses by school for Preliminary Study 2.

The two Preliminary Studies were conducted and reported as part of the course work for this degree (see Drewett 1995a,b). Issues and themes that arose from these studies and the first stage of the Main Study were used as a basis for constructing the research instruments for the Main Study. These topics included:

- problem areas for the students and teachers
- benefits for the students and teachers
- suggested remedies for the identified difficulties.

Main Study

The first stage of the Main Study consisted of distributing questionnaires to the sample set of schools. This stage was conducted in February and March 1996 in those seven schools comprising the balance of the group of participating schools: 3,4,9,11,13,14 and 15. The questionnaires used in Preliminary Study 1 were used again, as they had been successful in gathering data, including some that was not directly sought, but helped inform the study nevertheless. Using the same questionnaires in all phases of the study enabled aggregation over the total sample. Emergent themes were identified, and were compared with the issues arising from Preliminary Study 1. These were then used to prepare the prompts for the Focus Group discussion that was conducted in school 14, on 12th July 1996.

Table 3

<u>Overview of inquiry</u>

	Date	No of schools	Tools
Preliminary Study 1	Feb/Mar 95	4	4 x question -naires
Preliminary Study 2	Jul/Aug 95	6	1 x question -naire
Main Study	Feb/Mar 96	7	4 x question
	July 1996	1	-naires 1 x focus group

The sample

Sample characteristics

Several of the schools were chosen because of their location in south east Queensland. They were easily accessible geographically and were willing to participate in the inquiry, granting access to teaching staff, students and school documents, such as course selection subjects and student handbooks.

On several occasions *snowball* (Guba and Lincoln 1994)
sampling occurred when participating schools identified other
schools who were able to be included in the sample by virtue
of the fact that they, too, were using a vertical timetable.
The result was a final sample of eleven secondary schools,
spread from the south east to the north of Queensland.

The schools selected contained a cross section of various
educational approaches and ethos. The group included a
selection of Department of Education High Schools, Anglican
and Catholic Education administered colleges, both co-
educational and single sex. They were schools where the
vertical timetable had been functioning for at least one year.
The longest experience of vertical tabling was in one school
where it had been operating for eight years. The samples of
teacher and student participants within each school (who
volunteered to participate in this research) were chosen
randomly by the school co-ordinator of the project. The
administrator cohorts usually comprised the two or three
administrators (principals and deputy principals) in each
school. The members of the parent/guardian cohorts were the
parents of the students selected.

Sample size

The schools were selected primarily because they were
using the vertical timetable and they were located

conveniently. With no need for a minimum number of cases for statistical analysis, the sample size was decided by guesstimating how many schools the study would require allowing for withdrawal from participation of any of the participants.

The final set of schools was identified to collect information to identify key issues and themes, some of which were:

- students' inability to study first unit of choice
- sense of ownership afforded the students
- increase in workload for teachers
- sense of powerlessness experienced by some teachers
- new sense of challenge experienced by some teachers

The participants

The participants in this inquiry consisted of four cohorts: administrators, teachers, students and their parents/guardians. The participants are the *stakeholders*, whose roles are best defined by Van der Heijen (1996). He describes stakeholders as belonging to four groups: the *crowd*, the *referees*, the *players* and the *supporters*. In this study the parents and the community, relatively unaffected by the change in policy, and possessing a minimum of power are the *crowd*. The *referees*, who have the power, in this study would

be would be the administrators, the initiators of the change. The teachers are the *players*, whose interest and power are high. The students are the *subjects*, low in power, but high in interest.

The data gathering tools

Stake (1995) distinguishes between inquiry for making explanations versus inquiry for promoting understanding. For qualitative researchers, understanding is connected with intentionality, and particularization is an important aim. The research was concerned to gather the understandings and learnings from each group of informants concerning the implementation of vertical timetabling. It was intended, in this respect, to capture a cross-section of these understandings held in schools in which vertical timetabling was in operation. The time frame for the research and the practicalities of collecting data from a range of school sites dictated an approach in which a broad and relatively rapid sampling occurred followed by inquiry around particular understandings and issues in greater depth. Thus questionnaires were used to collect relatively brief statements of the understandings and learnings of the different sets of participants. The questionnaire seemed the most appropriate method to use as the information required was fairly specific and familiar to the participants (Warwick &

Lininger 1975). It was also important that the method allowed
for easy replication and to indicate patterns. A focus group
was employed to flesh out what happened to the dominant
understandings and learnings of the sample.

Questionnaires

Questionnaires have both advantages and disadvantages:

Advantages:

* wider audience can be reached

* minimal cost involved

* availability of written records

* allows time for reflection and composition of responses

Disadvantages:

* lack of personalised response

* inability to probe deeper when required

* lower response rate

* researcher is unable to respond to queries or offer
  assistance where needed (Guba & Lincoln 1994,Converse &
  Presser 1986).

The Main Study was commenced in February 1996, and the
questionnaires were sent to the seven schools that did not
participate in Preliminary Study 1. There were four separate
questionnaires, one for each cohort of participants. The
return rate was approximately 83% (See Table 4).

Table 4

<u>Main Study</u>

February/ March 1996

Number of schools: 7 (Codes 3,11,9,4,13,14,15)

Questionnaires returned:

Code	Admin-istration	Teachers	Students	Parents
3	1	4	3	4
11	1	2	1	1
14	1	5	3	5
15	2	1	3	3
9	1	3	1	-
4	1	2	3	1
13	1	3	1	1
Total	8	20	15	15

The questionnaires sought information related to the restructuring that had occurred in their schools, due to the introduction of a vertical timetable (Appendices D,E,F,G). Questions addressed areas including: selection of subjects, guidance for the students throughout their time at school, reporting, explanations given to describe the processes and the consequences for the students and teachers.

The broad areas of understanding that the questionnaires sought to obtain were:

- Personal input into the vertical timetable

- Advantages of the vertical timetable

- Disadvantages of the vertical timetable

- Outcomes for the teachers

- Outcomes for the students

The questionnaire seemed the most appropriate method to use as the information required was fairly specific and familiar to the participants (Warwick and Lininger 1975). It was also important that the method allowed for easy replication while indicating possible trends.

The questions were brief and to the point. The questions were not required to be multiple choice, but rather open ended, necessitating short, written responses. This was felt desirable, as some factual responses and some personal opinions were sought. This allowed for a greater depth of response and permitted insight into the reasons for the responses (Converse & Presser 1986). In brief, the questions were:

- To the point

- Written in plain English

- Open ended

Some extraneous information was supplied in some cases, but this provided further valuable data. This occurred with the question *Any further comments?* The question prompted a useful range of responses around areas not anticipated in the

questionnaire:

A teacher's response:

> **As a drama teacher this greater flexibility has
> enabled us to teach Year 8's Drama for the first
> time. Keen students complete 3 years of Drama in
> the junior school as opposed to only 2 under a
> normal school organisation.**

An administrator's response:

> **The system has great potential if the BSSSS were
> more flexible, allowing mid-year matriculation etc.**

On a few occasions the researcher verified questionnaires by direct contact with non-respondents in the participating schools to see if the events observed were supportive of the events described by the respondents (Guba & Lincoln 1994). The researcher was mindful of Fletcher's warning (1994,173) following his experiences with such verification of data gathered by questionnaires:

> ...the questionnaire replies were seriously
> misleading, some of them were almost worthy of being
> classed as fiction.

Obviously the researcher's actions occurred only on a very limited and discrete scale as it could have appeared that the respondents were being checked up on.

As with Preliminary Study 1, every questionnaire was accompanied by a letter of explanation, outlining the direction of the inquiry and the value of the respondent's co-

operation (Appendix H). The letter also indicated why the

study was important and encouraged participation. Each

participant received a consent form, explaining that

participation was voluntary and that they could withdraw at

any time (Appendix I). The students' questionnaires also

contained a consent form for their parent/guardians'

signatures giving permission for their participation (Appendix

J). A section was also included in the consent forms to be

returned if the participant required feedback about the

findings.

A trial of the questionnaires was conducted to ensure

that the actual information being returned was the information

sought and the right sorts of questions were being asked (Guba

and Lincoln 1994). For the sake of facility, a local school

where the researcher knew an administrator was used. Some

minor modifications were made in the light of feedback from

the trial and the supervisor of the research.

The questions used in the focus group interview were

based on issues arising from the three earlier stages,

Preliminary Studies 1 and 2, and the first stage of the Main

Study. The focus group discussion was used to fill out

further some of the key understandings and learnings relating

to the vertical timetable. For example, many respondents noted

that the major perceived difficulty of the vertical timetable for the teachers was the increase in workload. This became one of the prompts in the focus group. The issues that arose from the first three stages and which were explored further in the focus group data gathering were:

- Length of units of study...term or semester?

- Have teachers lost the vision of the vertical timetable ethos?

- Teacher workload, why is it so great? How to address this?

- Is teacher stress real? If so, how to address it?

Focus group interview

In June 1996, the researcher was invited to organise a two-day action research workshop at school 14. An invitation had been extended earlier in the year by the Principal to conduct such an investigation into the model of the vertical timetable adopted by the school. The aim of this project was to identify strengths and weaknesses, and make any relevant recommendations. In return for this, permission was sought to conduct a focus group discussion in the closing session of the program. The Principal acceded and the staff were requested to attend and co-operate.

During the discussion there were two administrators and twenty-three teachers present. Prompts were prepared by the researcher and she acted as the facilitator. The session was conducted in the school library, after school, to assure privacy and generate a somewhat relaxed atmosphere for all concerned (Lunt & Livingstone 1996).

The questions took a great deal of time to devise, involving analysis of the data collected by the questionnaires. A list of possible questions was made. Brainstorming sessions were held with colleagues, and these were helpful in devising variations in phrasing. Eventually, critical questions that captured the intent of the inquiry were highlighted and included in the final list (Krueger 1994).

The questions were prepared before the program at school 14, but some leeway had been left to include any prompts that would apply to areas identified during the action research. Such was the case regarding the establishment of pre-requirements of subjects for Year 11 as well as the sequencing of unit offerings. The preliminary list was extended to include two questions that had local relevance (indicated *).

* Length of units of study...term or semester?

* Has the vision of the vertical timetable ethos been lost?

- Teacher workload, why is so great? How to address this?

- Is teacher stress real? If so, how to address it?

- Should there be pre-requisite subjects for Year 11 subjects?*

- Should sequenced subjects be delivered in sequence?*

Outcomes of the group interview are presented in Chapter 5.

Ethical considerations

There was one major ethical consideration to be made throughout the project: the confidentiality and anonymity of the participants (Denzin & Lincoln 1994,293;Purnell 1996,6). As such, procedures and practices were put into place to protect the participants, the integrity of the research and the researcher. These actions of the researcher parallel those suggested by Fullan (1993) with regard to the moral aspect of educational change discussed in Chapter 2.

The original proposal for research was approved by the Human Ethics Research Review Panel of Central Queensland University on the 4th January, 1995. This ethics committee was satisfied with the ethical considerations discussed in the application.

Firstly, all participants were volunteers. They were given an information sheet (Appendix H) that described the

background details of the study and a second form that
explained their rights (Appendix I). For example, they could
have withdrawn from the study at any time while guaranteeing
their anonymity and the security of the data they provided.
All participants received a copy of their signed consent form
so that the conditions were available to them at all times.

The parents of students involved were contacted to supply
written permission for the inclusion of their sons/daughters
in the study (Appendix J). A sufficient number of potential
student participants was included so that the research would
not have been left stranded, and this group would still be
well represented if some parents had refused permission. All
participants were advised that the findings of the inquiry
would be available to them prior to publication, for their
perusal for a finite length of time. The participants were
invited to accept this invitation in order to check for
accuracy and to add any further information. This provided a
form of validation for the researcher as well.

The administration of each school was fully informed as
to the nature of this inquiry. The principals were requested
to give their permission to be acknowledged in the index of
the completed thesis, with the identity of all respondents
remaining anonymous. Each school was assured that measures

were taken to limit access to the data on a need to know basis. The documents supplied by the schools were made available to all staff, students and their parents/guardians. The possibility of contentious comments and observations arose in the questionnaires, but the identity of all participants would remain anonymous. The way in which the findings are written up does not permit any individual or school to be identified. Ethical procedures are summarised below:

- Participants were volunteers
- Participants were supplied with all information regarding the project
- Anonymity guaranteed for participants
- Participants retained the right to withdraw at any time
- Security of the data was assured
- Participants received a copy of their signed consent form
- Parental consent was given to enable students to participate
- Participants will be given a copy of the report before it becomes public
- School administrators granted access to the schools
- School administrators were kept fully informed
- Report will not identify any participant or school

(Purnell 1996, Miles & Huberman 1994).

The above arrangements applied to those participants who completed questionnaires. They altered slightly with the focus group discussion. The Principal agreed for the interview to be conducted at the conclusion of the workshop and was given the information sheet (Appendix H). The status of the project and the intended role of the focus group interview were outlined. These arrangements were conveyed to the staff and reiterated by the researcher at the commencement of the session. The relevant procedures as used in the earlier stages were guaranteed.

Analysis of Data

The data were analysed following Miles and Huberman (1994). This section of the chapter adheres closely to the stages of data analysis Miles and Huberman suggest.

The analysis of the data followed the following sequence:
1. data reduction
2. data display
3. drawing a conclusion (Miles & Huberman 1994).

1. Data reduction

Data reduction (Miles & Huberman 1994) was the first step in the process of analysis. This sub-process involved several steps: refining and focusing of the data that were collected.

2. Data display

The second sub-process involved in the analysis of the data was the data display (Miles & Huberman 1994). To this end the steps of identifying units and categories were adopted. Several reasonably obvious units of response reappeared regularly, sometimes a word, perhaps a phrase or maybe a sentence. This was the case with participants who described the students as the group who gained most from the vertical timetable. The data display process involved the use of coloured pens on the returned questionnaires to link similar themes (Miles & Huberman 1994).

The second step, categorising, was used when all the coloured coded responses that related to the same theme were brought together. By placing the responses literally side by side, and noting patterns and themes, the responses were placed in colour coded sets. Occasionally sets consisted of miscellaneous single items, as they appeared to be unrelated to any of the larger sets, and were considered later (Miles & Huberman 1994). Two responses that were allocated to the miscellaneous set identified an unanticipated theme. The issue involved the tracking of students through the school, and it took on greater importance as the study progressed   This was because it was identified as a problem by many of the

participants.

As a result of the data display the understandings and
learnings of the participants were grouped into six
categories:

- Gains for the students

- Disadvantages for the students

- Gains for the teachers

- Disadvantages for the teachers

- Basic administration problems with the timetable

- Miscellaneous

Once the six categories were identified, they were
examined for sub-issues (Miles & Huberman 1994). These
emergent themes constituted the findings of the analysis which
are presented in detail in Chapter 5, but are summarised in
Table 5, which presents a clear visualisation of the most
frequently occurring issues arising from the personal
constructs recorded in the questionnaires:

Table 5

Issues arising from data display

Issues	Examples			
Gains for students	More choice	Flexible programs	Personal satisfaction	Own rate of progress
Disadvantages for students	Loss of st/teacher contact	More assessment	Can become lost in system	Soft options chosen
Gains for teachers	New sense of challenge	Seeing the gains for students		
Disadvantages for teachers	Loss of st/teacher contact	More administration	Increased stress	Teaching new subjects
Organisational problems	Unavailability of first choice	Students can be lost	Sequence of subjects	Length of units
Miscellaneous	Difficult to track students' progress	BSSSS's lack of flexibility	Problems at Panel meetings	

3. Conclusion drawing

The initial issues that arose in the data obtained from the Preliminary Studies were compared with themes that emerged during the Main Study. An example of this was the issue that there were both negative and positive consequences for the students and teachers with the introduction of the vertical timetable. There was an overwhelming majority of responses regarding the benefits of the vertical timetable for students, despite some problems for the teachers and administrators.

The process of analysis occurred iteravitely during the life of the research (Miles & Huberman 1994, Stake 1995). The project comprised four stages, and with each stage there was data collection/data analysis. Each set of understandings and learnings about vertical timetabling informed subsequent stages of the research.

This chapter outlined the design of the project. Firstly, the outline of the investigation was described. A brief account of the Preliminary Studies (see Drewett 1995a,b) was reported. The design of the Main Study was described and included a description of the sample and the participants. Ethical considerations were also described. The three stage process used for data analysis was described following Miles and Huberman (1994).

The results and findings are presented in the next chapter. The results of the questionnaires and the focus group interview are described and the findings as they relate to the understandings and learnings of the participants are detailed.

Chapter 5

Results and Findings

There are no facts, only interpretations.

Friedrich Nietzsche

Introduction

This chapter is divided into three sections. Part 1 presents the results of the questionnaires. Part 2 introduces the outcomes of the focus group interview. In Part 3, a discussion of the findings follows, and an outline of the conclusions is presented.

Part 1 contains the results of the data analysis of the information collected by the questionnaires, presented by groups. The questionnaires were different for each group of participants: administrators, teachers, students, parents/carers. The questions focused on similar aspects of the vertical timetable, but sought understandings and learnings from the different standpoints of each group. This was done in order to obtain a comparison of the differences in understandings and what had been learned about vertical timetabling.

With each group's responses, data referring to the perceived advantages and problems for the students with respect to the vertical timetable are also presented. This is done as the effects on students are likely to impinge on teachers, and can influence their understandings and learnings.

At the end of each group's responses, a chart will present a summary of the group's observations of the effects of curriculum delivery using the vertical timetable on the teachers. Responses are grouped according to theme. A second chart will present the effects on the students.

Part 1

Results arising from questionnaires

Section A:

Results arising from the classroom teachers' questionnaires

A.1 <u>Why did your school decide to adopt the vertical timetable?</u>

A majority of the responses addressed the perceived requirements of the students, with regard to the variety of choice, individual needs and access to success:

> ➤To provide students with access to a wide variety of subjects and an opportunity to succeed academically by repeating units they may feel they haven't done very well in.

> ➤...school should investigate alternative models of curriculum in the Junior school that catered more for the individual needs of the students....

Other responses cited less academic reasons:

> ➤Staff was influenced by the examples of other schools offering this new system.

➤The Principal decided he would introduce the system
in 1989.

A.2 <u>In what ways did the Administration involve you in the</u>
<u>planning and administration of the vertical timetable?</u> _
Approximately half the teachers were not teaching in the
school when the vertical timetable was introduced, so these
teachers had limited response. Of those who were present in
the schools for the introduction of the vertical timetable,
they describe their input as being mainly in the form of
completing surveys and revising the school handbooks:

➤**Looked at Handbooks from a variety of schools in an**
endeavour to ascertain the best way of organising
the units for subject areas.

➤**Although not all teachers contributed to the**
introduction of the vertical timetable, all are
involved to some extent with the ongoing
implementation in various ways, from planning new
curriculums, to giving advice to students.

➤**Implementation is ongoing. I am involved in**
helping students select units to meet their needs
and in choosing major and minor studies over the
two-year period.

A.3 <u>What benefits have resulted for the teachers from the</u>
<u>introduction of the vertical timetable?</u>

Most teachers described benefits for themselves. These included: a wider range of subjects to teach, revamping of the curriculum, and the wider scope available to address students' different learning styles:

> ➤Teachers have the opportunity to teach a wide range of subjects and students: lots of variety.

> ➤Teachers often have classes of very similar abilities - particularly good for gifted and talented, eg a Year 8 doing Year 10 Maths.

> ➤Teachers have more variety, chance to work with different students. Students choose to study the unit, so they are more interested.

> ➤Necessity to liaise with other teachers re individual students.

> ➤Teachers have more scope to cater for individual learning styles.

A.4 <u>What are the benefits of the vertical timetable for the students?</u>

All teachers described benefits for the students, including the wider variety of unit choice, the advantages of not being 'locked in' to a subject for two years and heightened interest, among others:

➤Students have more flexibility, choice, advancement across year levels and within subjects, or extra work on the same or easier level than cohorts without loss of face.

➤Students are able to succeed at the level required. More choice offered.

➤Everything studied is accredited to Junior Certificate.

➤Opportunity to accelerate through subjects or spend more time if needed.

➤Incentive is there for those who want to advance.

➤Choice of subject matter within subject.

➤Students feel they have a greater input into determining their own course of study.

➤Students no longer locked into subjects for a 2 year period when they are experiencing difficulties.

➤Students are highly motivated and involved in planning their courses of study and completing their chosen units.

➤Lower ability students do not have to progress to a higher level unit.

➢All benefits are focussed on the student - maximum choice of subject and level of study.

➢Opportunity for term options.

A.5 <u>Describe any difficulties that may have arisen for the teachers.</u>

Most teachers described difficulties that had arisen for themselves including a lack of continuity of contact with students, a lack of time to prepare work for new units, and another change in practice that has to be monitored.

➢It was just another change foisted upon us.

➢Preparation is done without a lot of time, due to lack of notice of units being taught. Management issues arise each term.

➢Uncertainty of units being taught.

➢Teachers experience additional stress of different ages and maturity levels in a class (often have similar cognitive but different social and emotional levels).

➢Increased workload, so the need for improved organisation. Term reports a hassle.

➢Teachers often experience a lack of continuity.

➢Students move on before behaviour patterns and work standards can be reinforced.

➢System is very hard on teachers new in the school. Hard to develop a rapport with the students.

➢Paperwork and record keeping.

➢Teachers need to adapt to learning 120-130 new names each term. Any interruptions in a 10 week period could be vital.

.6 <u>Describe any difficulties that may have arisen for the students.</u>

Teachers described issues that were involved with the selection of units, for example, suitability and availability, among others.

➢Students not always given the unit they wanted.

➢The students are not always the best judges of units to undertake. Some options are not always available.

➢Students think they can always get exactly what they want, but that is not always possible. They don't always understand the system to work out how to get the most out of it.

➤Students have to cope with change each semester (teacher). They are not always with peers in class.

➤Students can have too many choices.

➤Students changing subjects unnecessarily.

A.7 <u>How has the implementation and administration of the vertical timetable affected you?</u>

Responses to this question varied greatly, and have been assorted according to themes as indicated by selected quotes:

➤Initially it created a sense of imbalance in me: I felt stressed trying to come to grips with effect it had on my classroom performance.

➤Less time to concentrate on classroom activities.

➤At times I had to teach in areas I was not skilled in.

➤In servicing is much more difficult.

➤Given me more work to do. It has allowed me to be more creative when planning units of work.

➤Re-teaching units gives the opportunity to improve the teaching practices and resources.

➢I have only been affected by the students
in Year 11 not being as well prepared as
they should be for their subjects.

➢I chose to teach in this school because I could see
advantages of students working in subjects they have
chosen. Happiest students make for better
learning/teaching.

➢Increased teacher stress: new names at the
beginning of each semester, more record keeping and
documentation, eg record cards.

➢High workload, eg: multiplicity of tests, extra
handling of text books, lack of understanding by
other schools (panels at BSSSS).

A.8 Any further comments?

Once again, there were many different reasons and comments
offered:

➢Both my sons attend the school because of the
advantages offered by the vertical timetable.

➢Vertical curriculum has bad points and good points.

➢.....The worst thing about the whole experience was
having to listen to the complaints of others because
they didn't see the point.

➢The change has been good for me (a more mature
teacher). I have had to re-examine my methods and
sharpen my skills. There are more demands on
teachers' time and this reality should be addressed
if the quality of teaching is to be maintained.

➢It provided me with a more interesting and exciting
work place.

Summaries of the teachers' observations of the ways in
which a vertically delivered curriculum affected them
(Figure 2) and the students (Figure 4) are presented in the
following charts. The themes are not displayed in any
hierarchical or ranked order.

Figure 2

The ways in which the teachers see themselves affected by the

Vertical timetable

The ways in which teachers see themselves affected by the vertical timetable

Positive effects

- Variety in subjects taught
- Homogeneous ability levels in classes
- Contact with more students
- Cater for individual learning styles

Negative effects

- Increased work load
- Teaching less favoured subjects
- Increase in paperwork
- Many new names to learn
- Lack of continuity with students and subjects
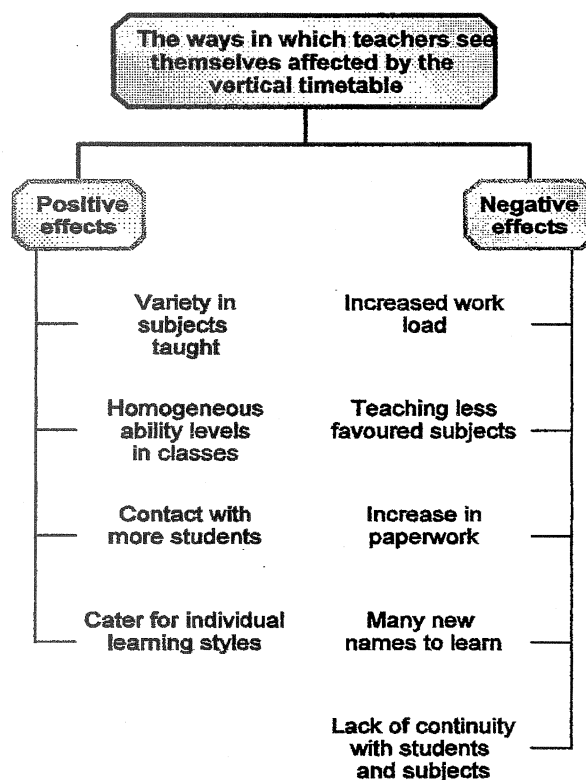
Figure 3

The ways in which the teachers see students affected by the
vertical timetable

The ways in which teachers see
students affected by the
vertical timetable

Positive effects

Negative effects

More subject choice

Selected units not allocated

Flexible curriculum pathways

Too many choices

Greater input into pathways

Some incorrect choices made

More motivation

Lack of contact with peers

Term subject options
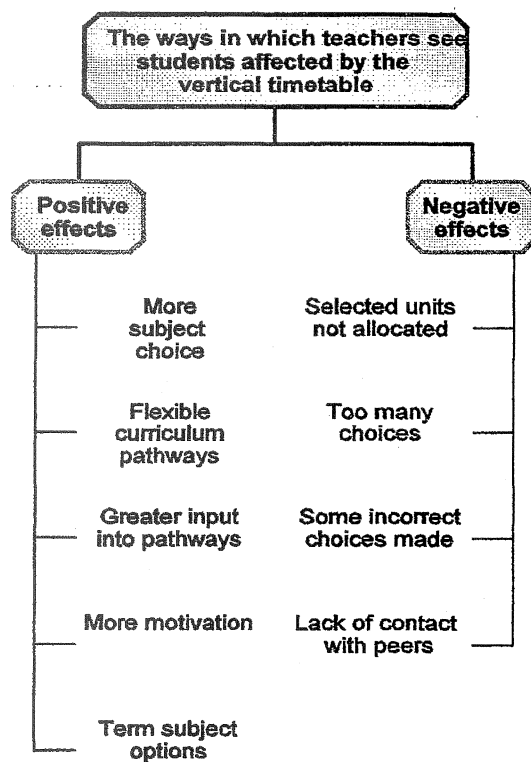
Results arising from the administrators' questionnaires.

B.1 <u>In what ways were the classroom teachers involved in the</u>
<u>planning and implementation of the vertical timetable?</u>

Administrators' observations varied. There were responses

from those who were in schools where teachers were not

involved, as well as those where teachers played a large role:

> ➤Staff consensus was reached before implementation.
> All staff were involved in design of overall system
> and individual units of work.

> ➤....A group of counsellors and mainstream teachers
> was heavily involved and teacher professional
> development was provided for all, but focussed on
> the counselling group....

B.2 <u>Describe any problems you had with the planning and/or</u>
<u>implementation of the vertical timetable.</u>

Administrators identified problems in several areas, for

example, the underpinning philosophy and the sheer volume of

work to be completed:

> ➤To plan and implement the philosophy requires much
> time and effort for all involved but the benefits
> gained are worth the effort.

> ➤Points of contention were mainly philosophical.

B.3 <u>What benefits were there for the teachers?</u>
Administrators described what they understood as the

advantages for the teachers, including the fact that the
increased number of units available could better match their
and the students' abilities.

➤The teachers were teaching students who have chosen
to study the subject.

➤Teachers were teaching students who were more
motivated by the short term goals.

➤Teachers were better catered for with the variety
of subjects available for teacher abilities.

➤Changing classes mid-year, breaking up difficult
groups.

➤Classes were more homogeneous – better motivation –
better discipline in most classes

➤Teachers have become extremely professional and
accountable.

B.4 <u>What benefits have resulted for the students?</u>
Administrators identified several advantages for the students.
These included the flexibility of the courses, and the fact
that the courses were student driven.

➤Students progress more quickly – a 3 year foreign
language course can be completed in 4-6 10 week
units.

➤Students are better able to select suitable courses.

➤Ability to repeat, upgrade.

➢Students really benefit - relevant choices, options.

➢Some flexibility for students. It depends on the flexibility of teachers.

➢Students have more choices.

➢Students have the flexibility to plan an individual program. Ownership of choices, ability to specialise.

B.5 Describe any difficulties that may have arisen for the teachers.

Administrators saw the main problems for the teachers include those associated with the increased workload, and changes to their teaching subjects.

➢The main problems were associated with going from the horizontal mind set to the vertical mind set.

➢Some teachers had an increase in the rate of subject change.

➢Lack of continuity with some groups.

➢Increases stress, especially in the first few years when new policies must be designed.

➢Teachers have to develop strategies to *quickly* get to know the students in each new term and to quickly access strengths and weaknesses.

➢Teachers have more work and lose contact with

students when they change units at the end of
semester.

B.6 <u>Describe any difficulties that may have arisen for the</u>
<u>students.</u>

Administrators described a limited number of problems that
resulted for the students. These difficulties included
teacher changes and subject selection.

> ➤Change in teachers and student groups each
> term/semester.

> ➤Subject selection can be confusing for students and
> parents.

> ➤Teachers have to develop strategies too quickly to
> get to know students each term and too quickly to
> assess strengths and weaknesses.

B.7 <u>Any further comments...</u>

Additional comments varied greatly in scope:

> ➤There is a definite conflict between the benefits
> for the students and the benefits for the staff. A
> balance must be sought.

> ➤It is truly student centred and is the best
> possible way to cater for the needs of the students.

> ➤Need a stable staff: each year we have 25-30 new
> staff- takes quite a while for teachers to adjust to
> a vertical timetable.

➢This system has great potential if the BSSSS were more flexible allowing mid-year matriculation etc.

➢My long interest in curriculum led me to visit 5 schools in South Australia in 1984, and the philosophy options and development still excite me as it is the best possible way known at this time to cater for the needs of schools and the demands placed upon them.

➢A vertical system inherently possesses a conflict between benefits to students/parents and benefits to staff. A viable system must continually strive to find an appropriate balance between these.

➢The staff ownership of the process of implementation ensures that the process occurs. Without staff involved (genuinely) in the decision making it would be difficult to eventuate. Demonstrably increased student outcomes achieved through increased efficiency of teachers as well as the obvious student ownership of their curriculum.

Summaries of the administrators' observations of the effects of the vertical timetable on the teachers (Figure 4) and the students (Figure 5) are presented in the charts following.

Figure 4

The ways in which administrators see teachers affected by the
vertical timetable

The ways in which administrators see teachers affected by the vertical timetable

Positive effects

Students have chosen the unit of study

More homogeneous classes

Teachers have wider variety of subjects to teach

Negative effects

Extra workload, professional development

Change subjects more often

Lack of continuity

Increase in stress levels

Figure 5

The ways in which administrators see students affected by the
vertical timetable

Results arising from the students' questionnaires

C.1 <u>What do you like most about the vertical timetable?</u>

Almost all students commented on the choice of units offered
and the lack of compulsion to follow a set course.

> ➢It gives you freedom of choice.

> ➢I like the fact that I can excel in English and
> Maths, which are my good areas.

> ➢I like being able to chose and change my subjects.

> ➢I am an academic student, and with this system I am
> able to try my hand at drama, media, art etc without
> having to choose them for a major study.

> ➢Being able to have the choice to progress to a
> higher level of the subjects chosen.

> ➢You don't have to have the same teacher all the
> time if you don't like them.

> ➢Changing subjects each term means you're able to do
> as many different things as you want. It enables
> you to find out what you are good at and what you
> like.

> ➢Opportunity to study subjects of interest at your level.

C.2 <u>What do you like least about the vertical timetable?</u>

Many students commented on problems regarding the availability of subjects. Other problem areas included a variety of topics: the age of others in the class and inappropriate choices of subjects, for example.

> ➢I don't like getting into a class where everyone is younger than you (or older in last year's case).

> ➢Some subjects close because of lack of interest.

> ➢People can choose subjects just to be lazy and not work.

> ➢Teachers have trouble getting to know students.....this loses some of the stability. However by the end of Year 10 you have experienced most teachers and they know who you are.

> ➢Change classes too much.

> ➢Limited range in subjects.

C.3 <u>What do you see as the benefits for the teachers?</u>

Students described the main benefit for the teachers in the fact that they received new classes each term. Other benefits were seen to be that teachers could teach in areas of personal interest.

➤The teachers get students who really want to learn.

➤The teachers get more interesting new classes each term and they can focus on their interests.

➤Teachers don't have to see the same students all the time.

➤Don't see any benefits for the teachers.

➤Teachers benefit because it gives them a chance to teach in areas they enjoy and are best skilled.

➤Teachers are teaching interested students who are willing to participate.

C.4 <u>What do you see as problems for the teachers?</u>
Students identified difficulties for the teachers that included the frequent changes of classes and an increased work load.

➤Learning new names and abilities of students each term.

➤Continuously having to change students' timetables and sorting through everyone's choices.

➤It puts a load of work on the teachers because they have to do a lot more reports at the end of term.

➤It takes time and effort.

➤Having mixed aged classes.

C.5 <u>Any other comments?</u>

A vast majority of the students commented on the benefits of the vertical timetable and their personal reactions to it.

➤I think it is well thought out and gives us the chance to achieve at our personal rate.

➤I really like it as you're not always bored doing subjects you don't like and are not good at.

➤Offers more opportunities for the students.

➤I think this is a great way of teaching because it is fun. It works you at your level and you choose the subject units you like so you learn much more.

➤It is good for the first two years but at the last year you run out of subjects.

➤ think this is an excellent program. I can do many different things seeing my interests are widespread.
➤My needs are catered for so I can learn at my own pace. I do not need to do subjects I dislike (eg Physical Education, B.P., Graphics, Geography and

8's do not get in soon enough.

Summaries of the students' observations of the effects of the vertical timetable on the teachers (Figure 6) and themselves (Figure 7) are presented in the following charts.

Figure 6

The ways in which the students see teachers affected by the

vertical timetable

The ways in which students see teachers affected by the vertical timetable

Positive effects

- Students want to learn
- New classes each term
- Can teach in areas they enjoy and are skilled in

Negative effects

- Increased work load
- Frequent changes of class (new names to learn)
- More report writing
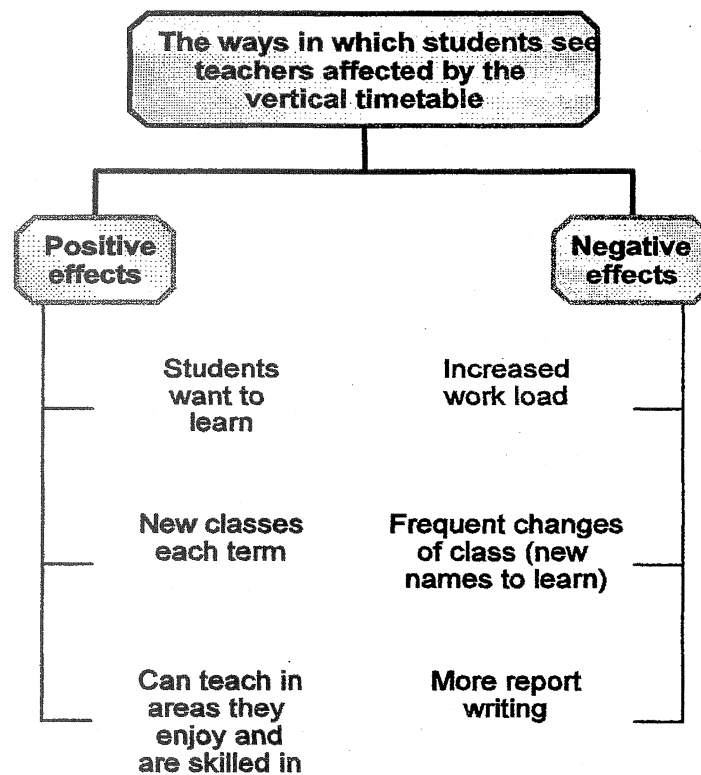
Figure 7

The ways in which the students see themselves affected by the
vertical timetable
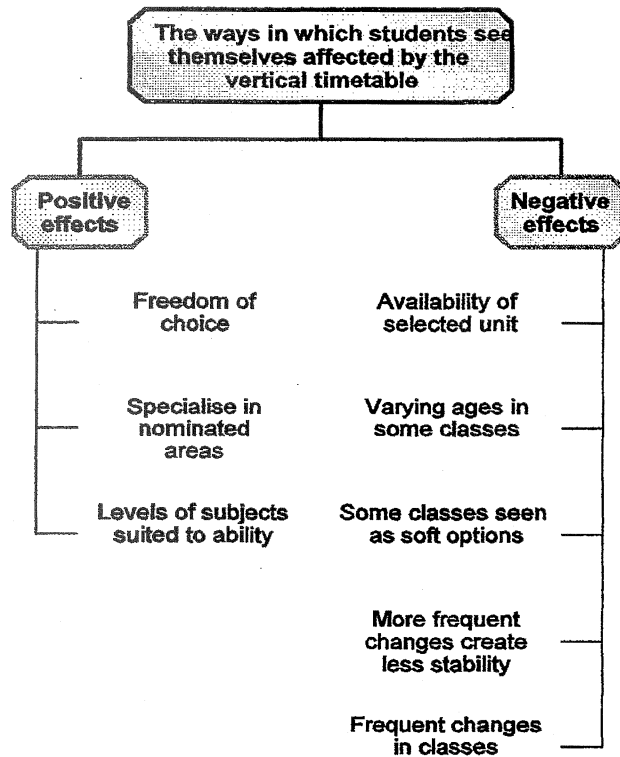
Section D:

Results arising from the parent/guardians' questionnaires

D.1 <u>What do you like most about the vertical timetable?</u>

A majority of parents commented on the flexibility of delivery of the curriculum using a vertical timetable, the concept of individual progress and the element of choice for the students:

> ➢Potential for students to have a say in their
> course choices...

> ➢The flexibility and fact that the student is a part
> of the selection process.

> ➢Gifted child can advance at his/her own pace, and
> less gifted child can find his/her own level.

> ➢I believe it gives the students more choice, and
> they can work more in the subjects they like.

> ➢Students have the opportunity to progress through
> the subjects (units) at their own rate.

> ➢Students have more self esteem as everyone can achieve
> at their level.

> ➢Students have the ability to choose their own subjects.

D.2 <u>What do you like least about the vertical timetable?</u>

The parents' responses referred mainly to the choice of

perceived 'soft options' of study, unavailability of units and the depth in which the units are studied.

➢Possibility of 'soft' choices or light homework choices.

➢If parental involvement is not there, the child is virtually at liberty to choose easy courses.

➢Occasionally students have to repeat a unit because of timetabling difficulties.

➢Too much choice which leads to a lot of units not being offered because of lack of numbers at that unit.

➢The depth in which the subjects are studied.

➢Due to shortness of units - 10 weeks - students with learning difficulties are able to escape unnoticed and then are allowed to proceed without passing subjects.

D.3 What do you see as benefits for the teachers?

Parents reported the main advantages for the teachers included the fact that the students chose to be there, so their attitude would be more suitable, as well as the added variety that may result from the change of units.

➢Not so many time wasters in class.

➢Teaching students who want to be there.

➢Variety, chance to know more students.

➢Students in the classes are grouped according to
ability level rather than chronological age.

➢Teachers get to concentrate on their best teaching
subjects.

➢Teachers have more variety.

D.4 <u>What do you see as the main difficulties for the teachers?</u>
Many of the parents saw an increase in the teachers' workload.
Other disadvantages were seen in the perceived loss of contact
time with individual students.

➢Teachers experience a lack of continuity,
especially in building relationships with students
with difficulties.

➢Teachers have difficult timetables, probably more
intense work.

➢Teachers have more book work to do.

➤Teachers have a lot more work to monitor each student.

➤Don't think there are any difficulties for teachers.

D.5 <u>Any other comments?</u>

The parents' comments were evenly divided between those in support of the vertically delivered curriculum and those who found it lacking in one or more areas:

➤It's the best I've seen.

➤I am unsure as yet whether this system will prepare children for Year 11.

➤There are too many choices with too many changes to fit students into the timetable....yet I like the way students can better their results in some subjects without having to repeat a whole year.

➤I think the system has merit, allows the kids to progress if they have the ability, although the assessment aspect needs addressing. The unitised curriculum offers choices, flexibility and ownership. I would be interested to know how the school rates in comparison with others. Does this system produce high achievers?

➤It appears to be working well for most students. We think it is the way to go for all schools.

➢I would recommend this method of organisation as I
have seen how both my daughters have revelled in the
variety of subjects, especially in comparison with
the bland curriculum offered in primary school.

Summaries of the parents/guardians' observations of the
effects of the vertical timetable on the teachers (Figure 8)
and students (Figure 9) are presented in the following charts.

Figure 8

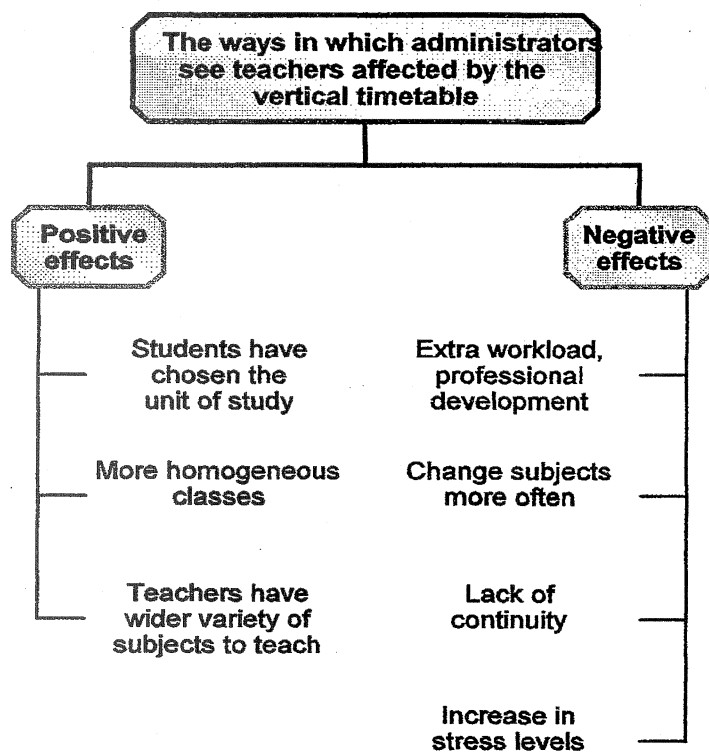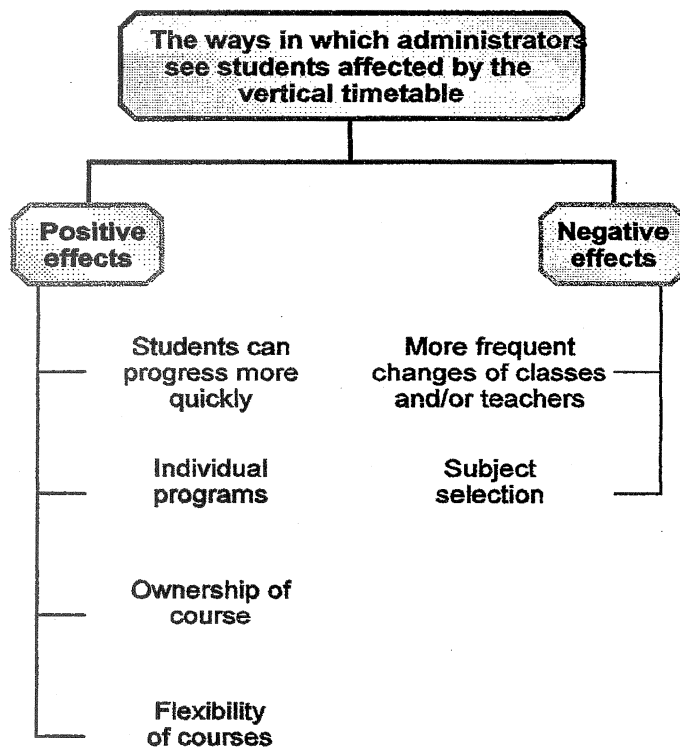The ways in which the parents see teachers affected by the
vertical timetable
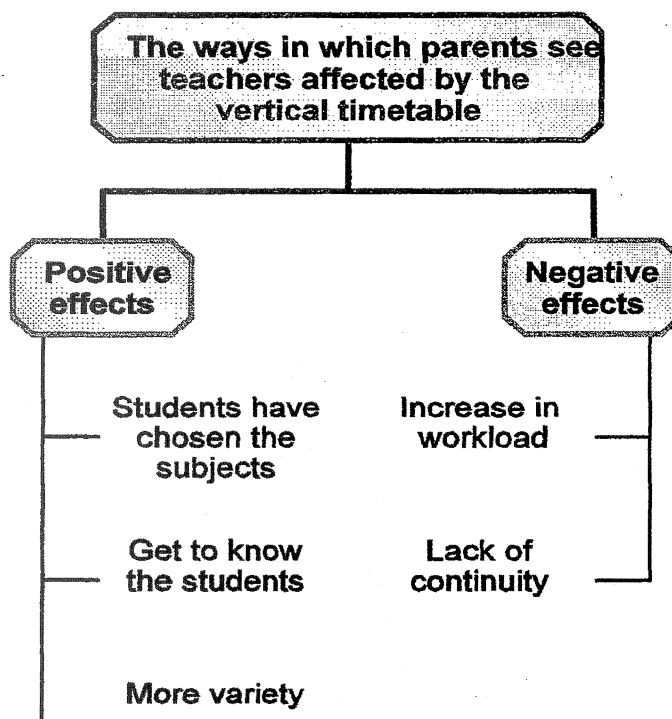
Figure 9

The ways in which the parents see students affected by the
vertical timetable
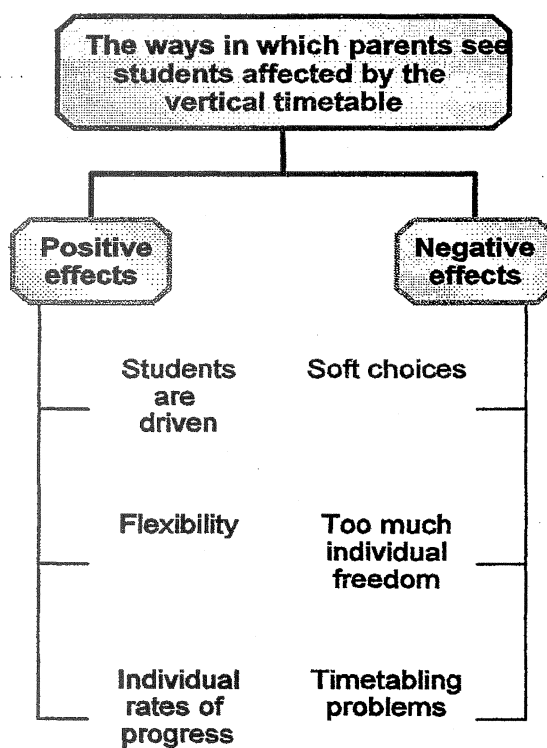
Summary

The responses of the four groups of participants were gathered in order to identify individual understandings of the effect of curriculum delivery using the vertical timetable. Individual responses have been used in quotations. These responses have been summarised in the figures at the end of each section.

The next section of this chapter will present data arising from the focus group interview. This data will then be summarised, and findings will be identified in Part 3.

Part 2

Results arising from the Focus Group Interview

The prompts used in the focus group interview included issues that were identified in the Preliminary Studies. The prompts were not questions, but topics that were open for discussion. This section is limited to the information relevant to the consequences for the teachers of curriculum delivery using the vertical timetable. Direct quotations from individual participants have been used. Frequently used comments and key determinants are also presented.

<u>Semester or term length units?</u>

Agreement was reached that semester length units were more preferable for the following reasons:

➢Half the number of reports will need to be written by the teachers.

➢There will be an increase of student/teacher continuity.

➢Subjects will be able to be taught in greater depth.

➢There will be fewer changes for both staff and students, in particular, the younger students.

➢Semester length units will allow for proper 'closure' of a set of units, for example with regard to recording profile data, identifying students with particular difficulties and the development of strategies to address these problems.

<u>The question of re-immersion of the teachers in the vertical timetable ethos.</u>

The need for re-immersion in the ideas and ideals of the vertical timetable was agreed upon as being desirable for the following reasons:

➢All teachers need to be refreshed and re-enervated periodically with the vertical timetable.

➢This would keep them up to date with any changes, new ideas, for example.

➢It would also inform Administration team of the grass root feelings.

➢It would be invaluable to assist the frequent changes of staff by In servicing the new teachers.

➢Use could be made of the student free days.

➢Could be used to help staff to keep in contact, especially those who are in a one off situation where they teach a subject, perhaps outside their area of expertise, for a unit only.

Teacher workload

Teachers were unanimous with regard to the increased workload, citing several perceived causes. These reasons have been targeted by suggesting strategies to address them.

➢Semester length units would lessen the levels of reporting, preparation, assessment, change, for example.

➢Prepare the timetable in advance, to assist teachers with preparation, and students with choices.

➢Limit changes to the timetables, thus avoiding an often heard complaint from students regarding the

inability of students to study the first unit of their choice.

➤Set some rules in concrete, such as those regarding pre-requirements for more advanced units.

Teacher stress

There was agreement that the increase in teachers' workload resulted in the development of stress. There were several strategies identified to address the situation:

➤Lessen the workload.

➤Use teacher aides to assist with record keeping and student profiles for example.

➤Semester length units, not term length units.

➤Re-focus and clarify the ethos of the vertical timetable.

The focus group interview was convened to address 4 main issues:

● unit length

● renewal of the vertical curriculum ethos

● teacher workload

● teacher stress

The issues were somewhat interrelated, and gave rise to several considerations. These will be discussed in relation to the

data arising from the questionnaires to identify findings.

<div align="center">✦ ✦ ✦</div>

Parts 1 and 2 of this chapter presented the results from the responses of the questionnaires and the focus group interview. Many responses indicated that problems may result for the teachers when the vertical timetable is used to deliver the curriculum. Despite this, no teacher participant indicated that it would be desirable to dismantle the practice. All respondents described advantages for the students. Many described some positive results for the teachers. These gains, including those for the students, suggest that, if the inherent problems are addressed, then administrators and school leaders will continue to use the vertical timetable to deliver the curriculum in secondary schools with benefits for both students and teachers.

The following section will discuss the findings generated as a result of interpretation of the data.

Part 3

Findings

As described in the chapter *Methodology and Design*, the engagement of vertical timetabling by a school community was conceptualised in terms of their learnings and understandings. When data from each of the groups are compared, it is possible

to gauge the commonalities and differences in how this innovation is understood and known. The frequencies of responses with common themes have been converted to percentiles and are presented in Figure 11.

The most obvious results are seen in relation to A, the increase in the teachers' workload. This increase is reported by almost all the teachers and 80% of the administrators, 47% of students and 27% of the parents/guardians. The next most obvious result is F, a new sense of challenge, identified by all groups, in particular the administrators (66%) and the teachers themselves (60%). Other obvious results can be seen in H, other positive effects, where 60% of teachers and students and 33% of parents noted gains for the teachers. Examples given included teachers being able to teach preferred units, and the fact that problem students would be a short term issue, as they would 'move on' when the next term/semester commenced. This issue may be perceived by some teachers as an advantage, but the question arises as to whether there is any true 'educational advantage' in such a position. As reported in the previous chapter, almost all participants described gains for the students as a result of the vertical timetable, thus the most outstanding categories in descending order of frequency were:

- gains for the students

- increase in workload for the teachers

- a new sense of challenge for the teachers

On the other hand, it can be seen in section B of Figure 11 that 42% of administrators, 35% of teachers and approximately 25% of parents/guardians referred to an increase in stress for the teachers. *Stress* was not defined for the participants. It was anticipated that the commonly accepted meaning would be utilised; a broad range of symptoms, both physical and psychological. These incluse fatigue, sleeplessness, anxiety and fear.

25% of teachers and administrators acknowledge some confusion and uncertainty for the teachers (D). All participants described other negative effects (E), in particular 40% of students and teachers, 38% of administrators and 25% of parent/guardians. Examples cited included the following: learning new students' names, learning to teach new curriculums and adapting to a new timetable. The graph was prepared with the information provided by the following numbers of participants in the cohorts:

- teachers - 20

- administrators - 8

- students - 15

- parents/guardians - 15

Figure 10

<u>Comparison of the ways in which the four groups of participants</u>

<u>see the teachers to be affected by the vertical timetable</u>

A   Increase in the workload

B   Increase in stress levels

C   Loss in continuity of teacher/student contact

D   Some teacher confusion/uncertainty

E   Other negative effects

F   New sense of challenge

G   Input into planning

H   Other positive effects
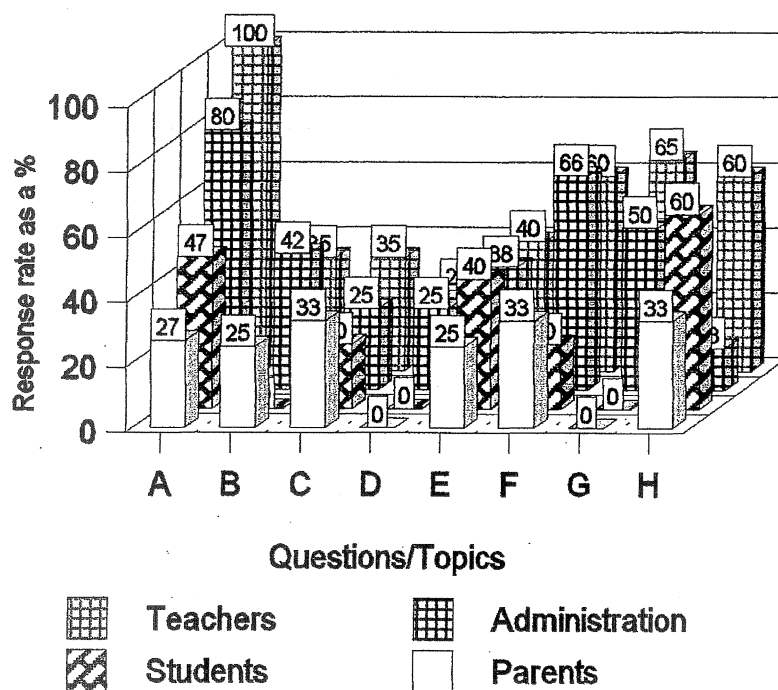
A Increase in the workload

All teachers identified an increase in the workload. This
was described in at least one of the following areas: record
keeping, maintenance of student profiles, preparation of new
units and assessment items, forming relationships with new
students and assessing their needs. This finding supports
similar observations by Dunham (1976), Kyriacou and Sutcliffe
(1977a) and Otto (1993) with respect to heavy workloads and
shortage of time.

A vast majority (80%) of the administrators acknowledged
an increase in teacher workload, compared with forty-seven
percent of the students and twenty-seven percent of the
parents. The fact that all teachers noted this consequence is
indicative of the perceived magnitude of this problem for them.
This finding supports the observations of Drewett (1995a),
Fullan and Steigelbauer (1991) and Maxwell, Marshall, Walton
and Baker (1989) regarding the increase in teaching and
administration duties as a result of using a vertical timetable
to deliver the curriculum. These findings echo those of Jessop
(1995) and Young (1995), and with respect to an escalation of
responsibilities in the areas of guidance, monitoring and other
duties tied to learner centred curriculum delivery. Even
though several teachers described increased responsibilities
with respect to guidance and monitoring, no participants noted
the possibility of legal risk involved in such roles.

Some concern must be registered if twelve percent of the administrators did not report an increase in workload for teachers. This could imply that firstly, the administrators had not been made aware of the fact because of problems with feedback from the teaching staff, or secondly, they did not personally note the fact.

It is interesting to note that the parent/student respondents did not recognise the full impact on the teachers. This can be better understood in light of Van der Heijen's (1996) explanation of the stakeholders in a situation: where the students are seen as the *subjects* and the parents are seen as the *crowd*. According to Van der Heijen, the crowd and the subjects are low in power and may have only minimal knowledge of the facts regarding the issue at stake. In the short term, with respect to the effects of a vertical timetable used to deliver the curriculum, this may be of little or no consequence. However, in the long term, this could affect teacher performance, particularly if teachers' concerns are not addressed in some way. This picture is supplemented by Jones and Emanuel (1981,9) who describe "the damaging effects on teachers' self esteem and psychological health". These authors describe ways in which the teachers' usefulness and efficacy of teaching style and content and the impact on the students may diminish. Otto (1983) outlines further possible consequences where a teacher may cease to be psychologically involved and

escape frustration by becoming:

> a robot who comes to work ....mechanically performing
> the task of teaching while remaining unaffected by
> the environment (Otto 1983,9).

Alternatively, some teachers may leave the profession entirely. Consequently, the problem with the increase in workload may then impact more directly on the students and, consequently, their parents in a chain reaction effect.

Such responses from the student and parent/guardian cohorts could be affected by the distance of the participants from the teachers' immediate sphere of action and responsibility. Administrators are in close proximity, students are somewhat further removed, while the parents are at an even greater distance. The rate of acknowledgment of the consequence decreases accordingly, with eighty percent of administrators, forty-seven percent of students and twenty-seven percent of parents noting this consequence (Figure 5.1).

The discussion in the focus group interview produced similar issues to those outlined above. This was to be expected, to some degree, as the focus group comprised twenty-three teachers and two administrators. From the moment the topic of an increased workload for teachers was introduced, the participants cited many individual accounts regarding ways in which their personal workloads had increased. The transcript

of the interview lists twelve different individual accounts. The circumstances varied from the increase in paper work and administration, to the number of meetings that required attendance by those teaching in more than one or two subject areas. Thus there was congruence between the information produced by the questionnaires and the focus group interview with regard to the topic of an increased workload for the teachers as a result of a vertically delivered curriculum.

B Increase in stress levels

Thirty-five percent of teachers report an increase in stress levels, compared with forty-two percent of administrators. The acknowledgement of teacher stress underscores the results of the West Australian inquiry conducted by the Department of Education (1987) where 40% of teachers were identified as being stressed, and 36% in the American context (1985) for a variety of reasons. Fifty percent of administrators acknowledged an increase. In the data produced regarding to the previous theme, fewer administrators than teachers acknowledged an increase in the teachers' workloads. There could be several reasons for the differences in responses to increased workload and stress levels. Firstly, many teachers may have hesitated to acknowledge stress in light of the stigma attached to stress and related problems, despite the anonymity of the questionnaire. Secondly, teachers may have alluded to this consequence in other responses, such as *other negative effects*.

The failure of students to note increased stress levels for teachers is noteworthy. The fact that the students did not refer to increased teacher stress levels could amount to the professionalism of the teachers in dealing with their students, or it could be the result of the limited powers of observation possessed by the average younger teenager who constituted the student cohort. It is significant, however, that almost half the administrators noted the stress for teachers, yet the situation apparently continues. One cause of this, perhaps, is that the administrators see the timetable as more important than the individuals, on the other hand, there is simply nothing that can be done to address the teachers' situations, or it is a low priority.

The fact that less then twenty-five percent of parents commented on an increase in stress levels of the teachers could be explained by the belief in some sections of the community regarding the working conditions of teachers, that teachers are overpaid and under worked, as referred to by a few respondents from the parent/guardian cohort. As a professional group, teachers have relatively low status (Kyriacou & Sutcliffe 1977b, Phillips & Lee 1980). Thus, some parents might not support the notion that teachers experience stress.

The discussion in the focus group highlighted the increase in teacher workload as a major contributing factor in the

escalation of stress levels. This was related to issues
including assessment, preparation of curriculums and general
administration. To this end, five strategies were outlined.
From this interview it appeared that the incidence of increased
stress levels was more widely experienced than indicated in the
teachers' responses in the questionnaires. In this regard, the
responses arising from the focus group more fully support the
findings of Bentley (1984) associated with teachers'
occupational stress as a result of curriculum change, and those
of Fullan and Miles (1992) addressing change in schools. The
word *stress* was used liberally throughout the interview. It
was used by six teachers with regard to themselves, as a result
of increased workload. Two other participants used the word
stressful to describe the situation in the school,
communicating the feeling that the atmosphere was becoming
intolerable. The occasion invited a comment from the
administrators present, but none was forthcoming. This failure
to respond echoes the situation reported in the questionnaires
where forty-two percent of administrators noted an increase in
teacher stress but the situation continues. There is
agreement between this result and that of the topic of teacher
workload where 80% percent of administrators describe increased
teachers' workloads. The potential results of such a
situation, if allowed to continue, are reported by Otto
(1983,8), including:

stress related ill health among teachers that covers
the entire range of psychosomatic symptoms, stress
diseases (like hypertension and heart disease,
respiratory problems and peptic ulcer, skin
disorders, diabetes) and psychological breakdown.

Phillips and Lee (1980) describe the burnout that may result
for teachers as a response to chronic stress caused by the
immediate teaching environment. Certainly these results are
extreme, but they exist as consequences of ongoing stressful
situations such as those reported by some participants.

C Loss of continuity in teacher/student contact

Approximately a third of the teachers (35%) and parents
(33%) noted a loss of continuity of the contact between the
teachers and the students as a result of the students'
selection of new units twice or four times per year, depending
on the length of the units of study: term or semester. This
observation was supported by twenty-five percent of
administrators and twenty percent of the students. These
findings converge with Scharaschkin and Stoessiger's (1987)
observations in Tasmanian secondary schools, those of Maxwell
et al (1989) in NSW, and general comments made by Middleton et
al (1986). These writers cite the lack of continuing
teacher/student contact as problematic.

This issue of a relationship-centred approach to education
is apparently, in this project, more important to the teachers

and parents than to the students and the administrators. (The researcher acknowledges that, because of the sample size, no generalisation is applicable.)

Teachers noted problems with the settling-in period required by most students at the beginning of each new unit. Some teachers saw that the process of getting to know the students and their needs was occurring several times each year instead of only once with the conventional horizontal timetable. Only one teacher referred to the lack of continuity as a strategy to evade problem students, yet this reason was cited by approximately thirty percent of the students as an advantage for the teachers. This outcome is viewed with some concern. The fact that such a response was produced may indicate a potential disadvantage of the vertical timetable; where students who are identified as being difficult or problematic are "shuffled" through the system, moving from one teacher to the next, with a lack of ongoing constant maintenance.

The responses of the parents indicated that they value the continuity of teacher/student contact. One has only to attend a parent/teacher night to be aware of the fact that parents expect the teacher to know their student and to be aware of his/her educational needs. Parents indicated that less contact is problematic for their student and for the teacher as well.

Again, there was congruence between the responses arising from the questionnaires and the themes produced by the focus group interview. The interview further acknowledged the lack of continuity of the student/teacher relationship as a negative consequence for teachers, as well as with regard to student learning. Again, as in the questionnaires, the situation was considered disadvantageous for teacher and student. Several teachers saw a trade off situation in the school where, with four changes of units per year, there was more contact with more students. This view is the obverse of that produced by the questionnaires, and, as such, bears noting.

D Confusion and uncertainty

The teachers who acknowledged being less clear in their goals in the school (25%) refer to "imbalance" and "feeling unskilled" for example. Fullan and Miles (1992) describe such anxieties of teachers during times of educational change, as do Hargreaves (1994) and Merton (1938b). These descriptions parallel those identified in the Preliminary Studies 1 and 2 (see Drewett 1995a). It was an important indicator if twenty-five percent of teachers refer to such feelings. It is acknowledged that the size of the sample in this project is such that no generalization is made or intended. This inquiry is based on the participants in the schools as outlined earlier in this report. The fact that these responses have been made by the teachers invites attention and gives rise to important

ramifications for both the students and the teachers themselves. In the short term, the scenario must appear very bleak for these teachers, with some participants reporting psychological conditions. The long term effects for the students could also be considerable, especially if the teachers refuse to/can't/won't accept the change. This could eventually lead to inconsistencies in teaching effectiveness as well as the possibility of further psychological damage for the teachers experiencing these consequences.

It needs to be noted that a quarter of administrators refer to teachers experiencing confusion and uncertainty. This apparently low figure arises possibly from the fact that there is often little opportunity for feedback regarding the difficulties of the teachers in the day to day business of the typical secondary school.

The centre of focus of this investigation was identification of the ways in which the participants see the vertical timetable impact upon the teachers in secondary schools. As such, this theme of teacher confusion and uncertainty is central and has potentially far reaching consequences. Twenty-five percent of teachers appear to be at the end of their tether and are "emotionally exhausted". The picture presented compares with that of teacher 'burnout' (Jones & Emmanuel 1981) presented earlier. These effects

correspond to the descriptions of *anomie* offered by Merton (1938b) and Orford (1992). These feelings do not arise from inconsequential causes, but from reasons cited in this report. Fullan and Miles (1992) see such consequences as part of the change process. Yet, despite the problems for teachers arising from the vertical timetable, all teachers, as well as a vast majority of the other participants, describe the benefits contained in the vertical timetable for the students. A reasonable assumption would be that those who experience the psychological effects described here would exhibit negative feelings regarding the vertical timetable. Yet this has not occurred. Thus, if the vertical timetable is going to remain in use in order to deliver the curriculum and better meet the needs of students, these particular consequences for the teachers must be addressed.

The fact that no parents or students commented on this aspect is not surprising. Neither group would be aware of the attendant necessary shift of methodologies. Perhaps they would not be cognizant of the ways in which the teachers would be required to alter their techniques and methods. Students and their parents were not able to look beyond the subject content delivered in the classroom. The fact that these two groups did not comment on these points could be due to the professionalism and ethics of the teachers in not permitting the students and their parents to become aware of any personal issues.

E Other negative effects

Forty percent of teachers and slightly fewer administrators (38%) refer to other negative consequences for the teachers (E). These varied, from a perceived lack of understanding from other schools and the Board of Senior School Studies (a view supported by the Report of the discussion paper "The next decade: a discussion about the future of Queensland state schools" (Education Views, September 1999)), to the teachers having to teach subjects for which they are not trained. This consequence supports Fullan and Steigelbauer (1991) and Rogers (1992) in relation to the effects of changes in the roles of teachers. Significant numbers of students (40%) and parents (25%) noted other negative consequences for the teachers. These observations included an increase in report writing with the more frequent changes in units of study.

Many of the teachers reported that there was never sufficient time to achieve set tasks with regard to the implementation (when considered in tandem with day to day teaching responsibilities), a fact supported by Farrell and Collins (1990). Several teachers in Department of Education schools describe their seeming lack of enthusiasm as resulting from the hierarchical structure of the school; the classroom teacher being only a small cog on the wheel, and, as such,

he/she could have little input into the process. This finding echoes Gibson's (1992) observations of the change process in large structures and those of Beavis (1995) in a tradition bound, independent school. This outcome contrasts with anecdotal evidence from participants in non-departmental schools where several respondents reported the way in which the innovators in their schools were perceived as having the freedom to make localised decisions, some of which were made in response to proposals from other stakeholders.

It is both interesting and important to note that a considerable number of the participants in all four cohorts refer to other problematic areas for the teachers. The long-term consequences could contribute to a further escalation of the stress levels if it was perceived that the situation was not addressed. This result for the teachers would contribute to the development of anomie as the feelings of loss of control and powerlessness increase. This consequence highlights the helplessness reported by Rogers (1992) and the isolation described by Knobloch and Goldstein (1971).

Although there were many problems for teachers reported by the participants, only one displayed an attitude of "this is not my task", as noted by Kimpston (1985), who describes such a viewpoint as a significant barrier to change. The responses revealed that many of the teachers did not understand the

change and their role in the process. These findings echo Muller and Wong (1991) who believe that teachers should understand "the intent of the change and the implementation process" for change to succeed.

The teachers in the focus group interview referred to many other negative consequences, as did their peers in the questionnaires. Some references were similar, such as having to teach units of study for which they are not trained. Other references were made to previously unreported problems. These included four references to the situation where they were teaching students who had not completed pre-requisite subjects for the units because the subjects in question were not offered each semester. Three teachers of Year 11 subjects felt that students were not being properly prepared for the subjects at that level. It must be noted that this perceived shortcoming may not be a weakness of the vertical timetable, but of other practices in the school. A certain feeling of negativity towards the vertical timetable emerged as a result of these factors. Again, the administrators offered no answer to this, and did not capitalise on what could have been used as an opportunity to dispel some of the angst of the teachers. As with the schools involved in the questionnaires, the situation was permitted to continue, regardless of staff discontent.

F New sense of challenge

It is of some import to note that sixty percent of teacher participants see new directions inherent in the different methodology and pedagogy embraced by delivery of the curriculum using the vertical timetable. This challenge was seen in many different forms: new ethos, revitalising stale skills and basically something new, especially if the change in practice was seen as being positive for the students. Almost all respondents in the four cohorts could see many advantages for the students, as presented in the previous chapter. Consideration must be given to the forty percent of teachers who find no new sense of challenge in making use of the vertical timetable to deliver the curriculum. Once again there will be short and long term consequences for both teachers and students. For this section of the teaching community the prospect of the vertically delivered curriculum is perhaps daunting, and further promotes a sense of powerlessness, the feeling that they, the teachers, are powerless, merely at the mercy of the decision makers. This would result in anomie, as described previously.

Seventy-six percent of administrators saw some new sense of challenge for the teachers. This could result from the fact that administrators clearly see the overall picture of the concept. They may be fully aware of the theory underpinning the model and can see the benefits for the students and the

teachers. (There were no specific questions in the surveys that focussed on the administrators' knowledge of the vertical timetable. The researcher felt it was beyond the scope of the inquiry to investigate other options available for administrators.) In most cases, the administrators were the initial agents of change, and, according to Van der Heijen's (1996) model, they were the *referees*, imbued with the power in the situation. In most cases, administrators were responsible for in-servicing the staff with regard to the theory and practice of the vertical timetable. They are also responsible for transmitting the vision of the change as described by Fullan and Miles (1992). Most educators would respond to a new challenge with enthusiasm. On the other hand, it is not surprising that so few of the parents (33%) and students (20%) were aware of any new direction for the teachers. Their knowledge of the shift in pedagogy and methodology would be limited, as they comprised the disempowered *crowd* and *subjects* in the situation (Van der Heijen 1996).

On no occasion was any reference made to a new sense of challenge by the participants in the focus group interview. The topic was not deliberately introduced, just as it was not directly probed in the questionnaires. This result of the focus group interview could have arisen from the fact that the interview was held at the conclusion of a two day workshop investigating the way in which the vertical timetable had been

functioning at the school. As a result, the participants' thoughts were still focused on problem solving rather that their personal achievements or reactions.

G Input into the planning of the vertical timetable

More than half (65%) of the teachers reported some input into the planning of the vertical timetable. As a result, according to Fullan (1982,1991) and Musgrave (1979) these teachers will have developed a psychological sense of ownership of the model. This appears an important factor in the way the vertical timetable is perceived by the teachers concerned. Half the administrators were aware of teacher input into the vertical timetable. Following Fullan's (1982) reasoning, only half, from the administration's point of view, could feel any ownership. This factor was relevant with regard to the teachers' perception of the vertical timetable, and how they work with it to deliver the curriculum.

The topic addressing ownership of the change was not probed directly in the focus group interview. This was based on the fact that an atmosphere of tension and potential conflict was sensed by the researcher and she did not believe that the time was appropriate to address that issue at that time. Nevertheless, while discussing another point, one participant who had been teaching at the school since the introduction of the vertical timetable made reference to the fact that the

vertical timetable was introduced by a past administrator who was seeking material for a thesis (which the researcher was not able to verify). At that point in time there were no additional comments regarding the matter, but several participants were observed nodding in acquiescence. After the interview had concluded, one of the administrators approached the researcher and informed her that the anecdote regarding the introduction of the vertical timetable was certainly widespread, but untrue. An ideal opportunity to better inform the staff had passed, perhaps in deference to the interview that was taking place.

H Other positive effects

More than half (60%) the teachers could see other positive consequences for themselves, such as a new sense of enthusiasm in teaching, yet only thirteen percent of administrators identified this point. This could have been because the other advantages are found in the classroom situation, where the teachers were able to see the gains first hand. This deduction was supported by the fact that sixty percent of students also noted other advantages for the teachers. They share the unique teacher/student relationship in the classroom and are more attuned to the situation than either the administrators or the parents. Some of the advantages were passed on in the home situation, perhaps, accounting for the fact that one third of parents acknowledged further positive consequences for the teachers.

Consequences for the students

The participants were unanimous in identifying advantages for the students when the curriculum is delivered using the vertical timetable. This positively reflects the key concept of the student centred vertical timetable. This finding underlines the attainment of the aims and objectives of delivery of the curriculum with a vertical timetable as presented in the student handbooks of the participating schools, as exemplified below:

> The flexibility offered by the vertical timetable allows individuals to pursue a course of study appropriate to their particular needs, abilities and aspirations (School 2).

Allowing for the obvious gains for the students, seventy-five percent of all participants noted disadvantages, supporting the observations of Maxwell, Marshall, Walton and Baker 1989), Middleton, Brennan, O'Neill and Wooten (1986) and Scharaschkin and Stoessiger (1987). Most of the disadvantages involve administration of the model, such as non-availability of chosen units, rather than the inherent student centred philosophy. One teacher reported, as an advantage of the vertical timetable for the students that:

> **Lower ability students do not have to progress to a higher level unit.**

This situation may be seen as advantageous by virtue of the fact that the student was not required to do more difficult

work, but this may not be an educational advantage. Accepting that the required number and correct levels of the subject had been studied, perhaps such students may miss out on other elements of success by remaining in their 'academic comfort zone' and not accepting the challenge of a higher level subject.

Another arguable advantage of the vertically delivered curriculum has been presented by a student who reports:

> .....I do not need to do subjects I dislike (eg Physical Education, B.P., Graphics, Geography and History) and can do integrated units....

Such a position supports the basic philosophy of a student centred curriculum where the student choses units of study according to interest and past achievement. Some guidance may be required with respect to entry requirements into tertiary or other courses. It is an issue of core subjects to provide a balance of studies to prepare for the future, an unknown world. This concept is of vital importance to administrators when providing a timetable and was addressed by Leech (1975), who was an advocate of offering students a balanced core of subjects.

Overall, teachers noted gains for the students, and sixty percent of the teachers saw advantages for themselves, as well as the negative consequences for themselves and the students.

Conclusions

Following the discussion of the findings of this project, several consequences will now be identified and presented in the following section.

A curriculum delivered with a vertical timetable is understood by all stakeholders to have a major impact on all stakeholders, in particular the teachers and the students. An example of this is the fact that all participants described positive results for the students, including increased freedom of subject choice and ways in which the student can 'self pace' his/her academic progress according to identified needs. A focus of this inquiry is the consequences for the teachers, but the effect on the students must be noted, as this, too, impacts on the teachers.

There are both positive and negative consequences for the teachers, which will be presented in turn.

Positive consequences

There were four positive consequences for the teachers:

1.   More than half the teacher cohort has discovered a new sense of challenge in their teaching.

2.   More than half the teacher cohort indicated that they had input into the planning of the vertical timetable, and, as such, probably possess a sense of ownership of the vertical timetable.

3.   More than half the cohort identified other personal gains.

4.   Gains for the students were perceived to be considerable,
     and as such, the vertical timetable would be supported by
     the teachers.

Negative consequences

There were five negative consequences for the teachers:

1.   An increase in workload, noted by all teachers.

2.   An increase in stress levels noted by a third of the
     teacher cohort.

3.   The loss of continuity in the student/teacher contact was
     of concern to approximately a third of the teachers.

4.   Some teachers (23%) experienced the psychological
     condition of anomie, as they felt confused and powerless
     as a result of the changes that accompany the vertical
     timetable.

5.   Almost half of the teacher cohort experienced other
     negative effects.

The negative consequences for the teachers as identified
by this inquiry were highlighted by the significance and
vitality of the discussion of the literature (see Chapter 2)
and the conceptual framework of the design of this inquiry (see
Chapter 3). The issues that constitute the conceptual
framework of this inquiry: management of change (Fullan 1993,
Fullan & Miles 1992, Wilenski 1989), significance of the

structure of the timetable (Allen 1989) and curriculum construction Brady and Kennedy 1999) assisted the researcher to better understand the results of the introduction of the vertical timetable.

The importance of the management of change is highlighted by reference to the second and fourth negative outcomes for teachers. A study of the inquiry's engagement with the practical concept of change will permit agents of change to understand and address issues of staff stress and the possible resultant feeling of anomie.

The issue of the significance of the structure of the timetable, the second aspect of the conceptual underpinning of this inquiry, could be significant when understanding the third negative outcome for teachers: The loss of continuity in student/teacher contact. Familiarity with the second aspect of the conceptual framework would allow managers of change to better understand the teachers' interpretations of the meanings contained in the structure of the timetable. Possible problem areas could be acknowledged and dealt within advance, while plans for the change were still 'on the drawing board'.

The third aspect of the conceptual framework of the inquiry involved curriculum construction (Brady & Kennedy 1999). An understanding of this notion could subsequently help

address the barriers associated with the first negative

consequence for teachers. If the stakeholders are fully

cognizant of the ways the curriculum is built, then problems

cited by some participants in this inquiry could be better

understood and perhaps avoided. This researcher asserts that

the way to address and perhaps avoid negative outcomes such as

those described above is contained in the literature reviewed

in Chapter 2, and the concepts that form the framing of this

inquiry. Attention to such information is important for agents

of change in order to create a positive context for educational

innovation, such as the introduction of the vertical timetable

to deliver the curriculum.

Summary

This project has caused the researcher to arrive at a good

understanding of how the various stakeholders understood

the effects of the introduction of the vertical timetable on

members of the schools' communities. She has identified four

positive and five negative consequences for the teachers as a

result of the introduction of the vertical timetable to deliver

the curriculum into secondary school. The project has produced

findings that describe numerous positive consequences for the

students, as well as some negative consequences. As a result,

when considering the implementation of the vertical timetable,

there are considerations to be made by balancing the advantages

and disadvantages of the model with reference to the teachers

and the students. This position is succinctly expressed by an administrator:

> **There is a definite conflict between the benefits for the students and the benefits for the teachers. A balance must be sought.**

It is interesting to note, considering the comments from the administrator quoted above and many of the other respondents, that administration teams in many schools find the vertical timetable worthwhile. It would be facile to infer that the benefits for the students were of more value than any perceived disadvantages on behalf of the teachers. Following dissemination of the initial findings of this research several educators provided some anecdotal information on the matter. One teacher (in an independent school) saw the reason in terms of a business metaphor: product differentiation. The teacher described the need for many independent schools to provide "something different" in education to tempt parents to enrol their children (personal correspondence from a teacher). This stance has recently been adopted by the Education Queensland. *The next decade: A discussion about the future of Queensland state schools* (Education Views, September 6 1999) reports a "sameness" and "blandness" about state schools. The report asserts that schools "cannot be all things to all people". Suggestions for "distinctive" schools include selective schools, magnet schools, navigator schools, focus schools,

community access schools, alternative schools and virtual schools (Education Views, September 6 1999,8). On the other hand, a junior administrator in a state secondary school saw the reasons as more personal. This deputy principal felt that the adoption of an educational innovation, particularly one that was perceived as beneficial for the students, would be a tool to help those concerned secure a position higher on the 'promotional ladder' (personal conversation with an administrator). Regardless of the reasons for the use of the vertical timetable to deliver the curriculum, potential concerns for the teachers have been expressed. Ways to address several of these difficulties are offered later in this thesis.

Based on the present investigation it is clear that teachers (and almost all other participants) see many advantages of the vertically delivered curriculum for the students and consequently, endorse its use. However, some teachers identify problems for themselves and are currently experiencing negative psychological effects as a result.

Findings from this inquiry underscore the fact that the stakeholders have come to learn that there are both positive and negative consequences for the teachers. Some of the negative effects are potentially serious, and, in the long term, may impinge upon other members of the school community,

the students, in particular. To suggest these negative findings must be addressed is a gross understatement and sounds like a cliche. To this end, a series of recommendations has been made and will be discussed in detail in the next chapter.

The findings presented here provide reference to the literature and conceptual issues contained in the framing of this inquiry. These notions have clarified issues with respect to the impact of a change in curriculum delivery on the teachers.

The findings and recommendations made here as a result of the researcher's investigation into the perceived effects of the introduction of the vertical timetable to deliver the curriculum have been identified and presented to enhance the process of such an educational initiative. A parallel theme was recently cited in the discussion paper: *The next decade: A discussion about the future of Queensland state schools* (Education Views, September 6 1999):"Schools need flexibility to be responsive to the needs articulated by their students and communities." Delivery of the curriculum using a vertical timetable is one such strategy.

The next chapter, *Discussion and Conclusion*, presents the implications of the findings of this inquiry as well a

discussion of these determinations. Five recommendations will be made. Methods issues, including limitations of the inquiry as well as the role of the researcher, will also be presented.

Chapter 6

Discussion and Conclusion

Out of intense complexities intense simplicities arise.

Winston Churchill.

$\top$his chapter will present a summary of the inquiry, the implications of the findings, recommendations arising from these implications as well as providing some suggestions for future studies. In addition, several methodological issues will be discussed. The methodological and conceptual aspects of this study, with regard to the findings, will be extended upon to provide a synopsis of the inquiry.

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Summary

The focus of this project was the understandings and learnings that are held by stakeholders in the im0lementation of vertical timetabling in secondary schools.

What issues arise for teachers, administrators, students and their parents/guardians following the introduction of the vertical timetable in secondary schools?

This broad question was divided into sub-questions:

- What was the participant's involvement in the preparation and implementation of the vertical timetable?

- What were the impacts on the students?

- What were the impacts on the teachers?

Two methods were used to collect the data: questionnaires for the four groups of participants; administrators, teachers, parents and students, and a focus group interview with staff

experienced with the delivery of curriculum using the vertical timetable. The results are reported in the previous chapter, with emergent themes and issues presented in two ways. Firstly, direct quotations were used to best illustrate the groups' responses to the questionnaires. Secondly, frequently used comments and key determinants were employed to express any consensus following the discussions initiated by the prompts in the focus group interview.

This study can be summarised in two ways: Firstly, the project encompasses a suitable and appropriate research design in order to address the main research question by way of the four sub-questions. Secondly, the findings provide references to the literature reviewed in Chapter 2, as well as the three concepts contained in the conceptual framing of this project: the management of change (Fullan 1993, Fullan & Miles 1992, Wilenski 1989), the issues contained in the significance of the structure of the school timetable (Allen 1989), and those matters incorporated in the construction of the curriculum (Brady & Kennedy 1999).

This study employed survey and focus group methods to identify the participants' individual understandings of the effects of the vertically delivered curriculum on members of the school community. Individual perceptions are not easily quantified, but they exercise strong influence on the meanings

attributed to the effects of the vertical timetable in secondary schools.

Individual perceptions and understandings of the impact of the innovation were further examined in the focus group. The case study method was used to gather, identify and interpret the understandings of the participants. This method considered the vertical timetable to be the case, studied jointly in a group of schools, considered an instrumental case study (Stake 1995).

The participants' understandings and learnings with respect to the introduction and impact of the vertical timetable were gathered, analysed and interpreted using the questionnaires, focus group interview and then textual analysis (Miles & Huberman 1994). The questionnaires were distributed and collected by school coordinators of the project. These data gathering tools were used because of the written record they provide as well as for convenience. The focus group interview provided further probing of issues emanating from the questionnaires. This forum permitted resolution on some issues, and extension on others. Following the data gathering stage with the questionnaires, the textual analysis method identified key issues arising from the individual constructs provided by the participants. The ethical considerations acknowledged in the data collection and

analysis stages of this inquiry have been employed effectively
and appropriately.

The study used the literature and conceptual issues
associated with the framing of this inquiry in addressing the
data gathering, data analysis and identifying the findings and
resultant recommendations that have been described in this
report. In Chapter 3 the researcher described the three
aspects of the underpinning of this inquiry into the learnings
and understandings of the participants. The concept of change
management (Fullan 1993, Fullan & Miles 1992, Wilenski 1989)
assisted the researcher coming to a greater understanding of
the in servicing and ongoing support needed by teachers when
experiencing a change in educational practice. The importance
of informed change agentry is focussed on challenging and
refining the ideas associated with introducing change into a
school. In practice, this idea facilitated the establishment
of change protocol considering the support provided for
teaching staff. The establishment of such a plan can lead to
the creation of a context supportive of change in the school.

The value of understanding the significance of the
structure of the timetable (Allen 1989) was regarded in
reference to the introduction of a change involving the
delivery of the curriculum. Theoretically, an understanding
of the structure of the timetable focusses on appreciation of

the meanings located in the organisation of the school day and the allocation of the school's resources. Practically, the issue permits a greater comprehension of the principles and operational issues embraced by the timetable. Here also, acknowledgement of such notions facilitates the process of change.

The notions contained in the third aspect of the conceptual framework of this study: construction of the curriculum (Brady & Kennedy 1999) were also applied. The importance of understanding the way the curriculum is constructed highlights the teachers' appreciation of the steps involved in the preparation of curriculum. In practice, this concept expedited the establishment of principles and tactics for new curriculum, thereby signifying the manner in which the execution of the notions of curriculum construction can lead to a positive change in practice.

Implications of the Findings

The inquiry's implications are with reference to the introduction of an educational initiative. The study represents the impacts of an educational innovation in terms of learnings and understandings of the stakeholders. These learnings were shown to be related to three literatures: the management of change (Fullan 1993, Fullan & Miles 1992, Wilenski 1989), the structure of the secondary school

timetable (Allen 1989) and the concepts of curriculum

construction (Brady & Kennedy 1999).

Seen in terms of learnings, this research emphasizes the

importance of the provision of support for teachers by the

change agents both before and during the introduction of

educational change. Support for teachers is vital and could be

achieved in one of several ways as suggested in the

recommendations of this thesis: in-servicing, clerical

assistance, positive role modelling and perhaps counselling

for those in need. It is suggested that establishment of these

services and strategies would be a positive step in the

direction of creating a positive context for change.

This study has ramifications for educators contemplating

the introduction of the vertical timetable. The findings of

the study indicate the fact that there may be some barriers to

successful change unless steps such as those identified here

are taken.

This study adds to understandings relating to change

management (Fullan 1993, Fullan & Miles 1992, Wilenski 1989).

It was clear from this research that issues of change

management pervaded the innovation from implementation to

routinisation. The quality, style and amount of management

experienced by the various stakeholders clearly influenced

what they learned about the innovation and framed the current set of understandings they held.

This research also indicated that the notion of the structure of the timetable (Allen 1989) was generally not an aspect of learnings and understandings among the stakeholders, in particular, the teachers. This researcher contends that change agentry must refine and consolidate the teachers' understandings and assumptions with respect to the significance of the structure of the timetable so as to provide teachers with a more robust account of innovations that relate to timetable change.

The ideas of Brady and Kennedy (1999) constitute the other aspect of the conceptual framing of this inquiry. Here, too, it was clear that the ways in which the innovation was understood by the teachers and other stakeholders did not reflect the issues identified by Brady and Kennedy as significant in any curriculum reform. It is asserted that an educational initiative, such as curriculum delivery using the vertical timetable, can be introduced effectively if the school community, in particular the teachers, are fully cognizant of notions like those of Brady and Kennedy with regard to the reform of curriculum.

The findings presented in this research map the kinds of understandings and learnings that appear to accrue to stakeholders when a vertical timetable is introduced. Based on these and the research generally, the researcher is able to make a set of recommendations.

Recommendations

This section outlines recommendations regarding:

- this study
- future studies
- methods issues for a future study

Recommendations arising from this study

The teacher respondents were almost unanimous in acknowledging the advantages of curriculum delivered with a vertical timetable for the students. The teachers support the concept of a student centred curriculum and the flexible learning approach. "They saw the need for schools to have increased flexibility across the whole spectrum" (Hon. Dean Wells, Minister for Education in a media release, addressing the release of Queensland State Education in 2010, September 6, 1999). Consequently, the recommendations arising from the findings do not target the ethos of the vertical timetable. They focus on the problems that have arisen for the teachers. There is no way of knowing if the understandings of the difficulties reported by the participants arise solely from the implementation and administration of the vertical timetable as presented in this study.

There are five recommendations arising from the findings of this project. Firstly, as the data indicate, some of the difficulties for the teachers from using the vertical timetable to deliver the curriculum were not fully appreciated by administrators. An example of this is the fact that only half of the administration cohort noted an increase in teacher stress level, while fewer noted any other negative effects. As a result, it is recommended that schools establish a system whereby feedback can be given to the administrators so that they are fully informed about the ways in which the teachers are affected.

In making this recommendation, it has been kept in mind the fact that, because of the hierarchical structure of teaching staff in most schools, or perhaps the personalities involved, it may not be an easy matter to simply give feedback, especially if it is negative, to the administration. Thus, the recommendation of adopting a systematic approach is made. This could be where the teacher informs the subject leader, who, in turn, informs the departmental head, who, in turn, informs the administrator via a series of meetings. Alternatively, feedback to administrators could be a part of "ongoing maintenance" of the administration of the vertical timetable as suggested in the focus group interview. These sessions could be two way, with administrators maintaining the vision as part of an overall plan or strategy (Dodd 1980,

Leithwood 1982), while staff provide feedback regarding the ways in which they feel they are affected. This style of approach could assist staff to accept ownership of the change, and thereby address one of the principal barriers to the success of the change (Marsh 1988a).

The second recommendation is that secondary schools deliver the curriculum with a vertical timetable in semester length units. This would address many of the difficulties for the teachers, students and some for the administrators, especially those associated with the generation of the timetable and the allocation of selected units of study to students.

While making this second recommendation, it is kept in mind the fact that with a shift to semester units, some of the flexibility of the vertical timetable, one of the cited attributes, will be lost. But, a balance must be sought, and carefully considered by the administrators in question.

All teachers in the cohort reported an increase in their workload. At least half of the incidents noted in the questionnaires pertained to the increase in record keeping, with regard to the student profiles and reports that require updating each unit. As a direct result of this, a recommendation is made that schools use more clerical

assistance, perhaps utilising teacher aides to assist.
Certainly, there are financial considerations to be made, but
some schools (two participants in this inquiry) have made the
move, after considering the options, and the results are
positive for the teachers.

Many of the teachers' difficulties could be successfully
addressed with the shift to semester length units, including
the lessening of the stress levels for the teachers with more
time available to complete the requirements of the units.
There still remain some teachers who experience anomie, or
feelings of powerlessness as a result of the situation in the
schools. Problems such as this cannot be remedied, in toto,
by the above suggestions. To this end, a fourth
recommendation is made for teachers to have direct access to
counselling and in-service provisions. Discussion of stress,
anomie or burnout, development of a support system within the
school (perhaps one teacher could be nominated to fill this
role), and consideration of the possibilities for individual
and environmental changes are seen as offering hope for
overcoming the problem (Otto 1983,9).

It is widely acknowledged that there are individual
variations in perceptions of stress. The finding of this
inquiry with regard to conditions in teaching that create
stress by imposing excessive demands, is supported by the

literature related to many education contexts as described previously in this thesis. The answers to the problem as addressed by this fourth recommendation are found at two levels. The solution at the first, personal level, would involve 'stress management'. Here, the individual aims at altering his/her physiological and, to a certain degree, psychological responses to stressors. This can be done in many ways, as reported widely in current literature, and is certainly not without value (Otto 1983,31). Easing of stress at the second level, that of the school, could possibly involve workshops, in-servicing and general mutually supportive systems in an attempt to address the isolation. School districts have counsellors who could be included in a strategy to address such problems. The involvement process of individual teachers is paramount. Such measures would be involved in this recommendation.

Sixty percent of the teachers found a sense of challenge in the vertical timetable, with regard to the new methodologies and pedagogies adopted. It is a further recommendation that administrators make use of this section of the teacher cohort. These teachers could be used as a source of enthusiasm for other teachers. This somewhat unexpected side effect could be tapped to create and foster a sense of ownership in the teachers. Such action could complement the role played by those teachers in the planning of the model,

and produce a wider platform of understanding and co-operation. Building on a positive consequence may help to offset, to some degree, a negative aspect.

In brief the recommendations are:

1. Create a system to channel feedback to administration.

2. Introduce semester length units for subjects.

3. Provide clerical assistance for record keeping, profiles.

4. Provide counselling for teachers suffering psychological conditions such as anomie.

5. Use the positive experiences of teachers to help offset the negative experiences of others, for example, those teachers who have found new directions can be a source of renewed enthusiasm.

In making these suggestions, reference is made to the conceptual framing of this inquiry. Recommendations 1 and 5 involve the notions of management of change (Fullan 1993, Fullan & Miles 1992, Wilenski 1989). Here the relevance is seen with regard to the ongoing support needed by teachers during the change process. Recommendation 2 includes the suggestions of Allen (1989) with respect to understanding the structure of the timetable in parallel with Brady and Kennedy's (1999) advice regarding curriculum construction. Recommendation 3 contains elements of all three concepts: management of change; understanding the structure of the timetable and knowledge of curriculum construction. Each of

these issues is significant for the realisation of the
successful introduction of the vertical timetable to deliver
the curriculum.

The future of the vertical timetable

It has been acknowledged that there have been, and will
continue to be changes in our schools (Haddrell 1997). This
observation has been supported very recently in a discussion
paper *The next decade: A discussion about the future of
Queensland state schools* (Education Views, September 1999,
p11): "Education Queensland should explore and develop new
pedagogies that meet: The needs of a rapidly changing and more
complex society; The emergence of an information society and
the increasingly diverse needs of students."

The curriculum and its delivery have changed and will
continue to change. Secondly, the nature of the teacher and
teaching has changed. Thirdly, the nature of the student has
changed. It is perhaps this third aspect that drives the
first two. As recently as six years ago Hargreaves says of
the contexts in which schools operate:

> On the one hand, is an increasingly post modern
> world characterised by accelerating change, intense
> compression of time and space, cultural diversity,
> technological complexity, national insecurity and
> scientific uncertainty. Against this stands a
> modernistic, monolithic school system that continues

to pursue deeply anachronistic purposes within obstructive and inflexible structures (1994).

Yet changes have been made, some of which are presented in this report. No longer are the curriculum content and delivery devoted to singularly academic outcomes. The structures for schooling have changed as described by Cumming in *Coordinating Diversity* (1996). This was not the first move to improve the students' outcomes. *Shaping the Future* (1994) provided new directions for education in Queensland. In order to continue this recognition of student diversity, the Cumming Report provides a framework that embodies the flexibility to address individual curriculum pathways for students. Educators who wish to consider student centred learning cannot fail to consider the ten principles outlined by Cumming.

Many of the suggestions of the Report converge with issues at the centre of the vertical timetable. An example of this is seen in Principal 5 (Cumming 1996,72):

> The current flexibility of schools to develop programs that best suit the needs of their students ought to be maintained.

In order to best deliver such programs acknowledgement is made of the time constraints of the typical school day:

> Flexible pathways involve flexible timetabling arrangements (Cumming 1996,73).

This statement highlights the importance of the various models of curriculum delivery presented in Chapter 3 and referred to

in the most recent report on education in state schools in Queensland: *The next decade: A discussion about the future of Queensland state schools* (Education Views, September 6, 1999).

The future of the vertical timetable appears to be assured in the light of the shifts in policy and attitude outlined above. It is not the only way to deliver the curriculum in a more flexible way. It is one way that may be even more successful if the recommendations offered in this chapter are pursued. These suggestions are made in the light of and informed by the broad learning framework of educational change underpinned by the concepts: the management of change, the understanding of the structure of the timetable and the stages of curriculum construction.

Possibilities for future study

The reference to some of the educational changes that have been effected in Queensland since the 1970's was to create an understanding of the climate of change in secondary schools in the State. By identifying findings and developing recommendations in this chapter, the researcher has focussed on the shifts in policy and curriculum development that have impinged on the state's secondary schools. During the process of conducting this inquiry, other data were also gathered that suggest further possibilities for the larger picture, and invite discussion.

The role of the teacher is changing rapidly. Increased responsibilities have resulted from innovations. This has highlighted the need for professional development in the areas of decision making and curriculum modification, among others. No longer will 'formal' teacher training cease when teachers have finished their undergraduate courses and enter their first schools to start teaching. In order to attain and retain professional currency, teachers will need ongoing professional development as well as their academic accreditation, perhaps a combination of in-service training and university work (Gibson 1992).

As Vocational Education is embraced more closely by Australian schools (see Chapters 1 and 2), teachers will undergo further shifts in their conventional roles. The government is committed to increase the role of vocational education and training (VET): "Teachers want greater flexibility to incorporate curriculum changes....VET options are but one example" (Education Views, September 6 1999). The government also seeks to allow students to move freely between it and our schools (Curriculum Corporation 1998). Teachers will become increasing involved in non-traditional roles as models are adopted and adapted from United Kingdom and Europe (Morrow 1994).

As the teacher's role shifts, so will his/her work patterns: "They also recognise that teachers need help with their work because what society now expects of them is far more complex than in the past and their role has changed from the one they were trained for" (Wells, September 6 1999). Job descriptions in the future will perhaps acknowledge responsibilities outside the classroom as well as the traditional role. This move will, in turn, impinge upon staffing ratios and organisation of the school. Teachers will need non-contact time to develop ideas and curriculum for example. Just as some schools have introduced four day weeks and split shifts to better address the changing needs of the students, some modification of the school day and year may be required to meet the needs of the future teacher (Gibson 1992). Any such shift in procedure or practice will necessitate substantial conditioning of all stakeholders over a long period.

Recommendations for future study

Throughout the period of conducting this investigation, there has been a great deal of contact between the teachers in the secondary schools and the researcher. This contact was either due to the teachers' participation in the study or personal friendships. As a result, it has become clear that teachers are experiencing challenging times.

The personal and academic contact with teachers reveals that some educators are exhausted, confused and angry with the changes in schools. Tales abound of staff shortages in some areas. There are apparently many teachers who resign from schools every term. This research has identified the general topic of teacher powerlessness and dissatisfaction as topics recommended for future study. Anomie was identified as a consequence of the implementation of the vertical timetable, but within the parameters of this inquiry, it was not possible to identify the extent of the influence of the vertical timetable, or the result of another change in educational practice. This research indicates the need for further investigation of this condition.

On the other hand, the personal constructs of many of the participants in the teacher cohort in this inquiry imply that many teachers find reward in and are positive about curriculum delivery using a vertical timetable.

These recommendations for future study would, if implemented, contribute greatly to the literature associated with the three concepts of the underpinning of this thesis: the management of change (Fullan 1993, Fullan & Miles 1992, Wilenski 1989), an understanding of the significance of the structure of the timetable (Allen 1989) and knowledge of the steps involved in curriculum construction (Brady & Kennedy

1999). Such literature serves to inform and transform the thinking of educators and those interested in such matters.

Methodological issues

The methodological issues that will be discussed in this section include the following:

● role of the researcher

● limitations of the study

● issues not addressed by the questionnaires

The role of the researcher

In the data gathering stage, the participants and the researcher played complementary roles, with the researcher gathering the data supplied by the participants. This involved preparing, distributing and collecting the questionnaires in the preliminary studies. In the Main Study this role continued, but incorporated the organisation of a focus group interview.

The second sphere of action involved the researcher alone. In this role she interrogated the data, built the theories, prepared and wrote the report.

Phase 1: Data collection

During this stage, the researcher played the pivotal role in the initiation and ongoing implementation of the project. This involved establishing and maintaining contact and working relationships with the school co-ordinators of the project.

This occurred from July 1994 when the schools were first

contacted to seek their co-operation, until the first

questionnaires were distributed in February 1995. In

addition, the researcher was involved in the preparation of

the data gathering tools, such as questionnaires and items for

discussion and debate in the focus groups. During this early

stage of the project, she was responsible for maintaining

interest in the project and supplying periodic feedback for

the participants in their own working environment. This

process continued throughout the project. The researcher

believed it was important that she was actively involved with

the school co-ordinators of the project, reassuring them that

the research was responding to their needs and interests and

that there would be outcomes that could be adopted and adapted

by them.

Phase 2: Analysis and Report writing

Initial analysis of the data occurred from the moment the

first piece of datum was collected. The first completed

questionnaires were received in February 1995. Immediately a

protocol for storing the data was established, in readiness

for analysis. This continued throughout the first active

stage as the researcher worked in tandem with some of the

participants, especially the school co-ordinators of the

project, reminding and prompting them to collect and return

the completed questionnaires. By March 1995, sixty percent of

the questionnaires had been returned, and the first stage was

declared completed, in readiness to analyse the data. This second stage involved the researcher alone. At this point the data were collated, classifying them into themes and discrete issues, in an attempt to achieve one of the anticipated outcomes of the inquiry, to identify the effects of the vertical timetable on the teachers as reported by the four groups of participants. As the textual analysis continued and deepened, the building of the knowledge base that was commenced in the earlier stage, strengthened and developed. At this stage the researcher accepted full responsibility for the analysis and documentation of the inquiry. No longer could ideas be submitted to the supervisors for input and feedback. The researcher worked alone, with the occasional need to refer to a reference point. It was her responsibility to take the assembled data through to the completed report.

This process continued when questionnaires were used in later stages, July/August 1995 for the second stage of the preliminary study, and February/March 1996 for the main study.

Throughout the inquiry, the researcher played a multi dimensional role that was made explicit to and negotiated with the participants as needed. These various roles were:

- convenor

- recorder, documenter and manager

●   critical friend

The potential for bias was acknowledged and is addressed later in this chapter.

Convenor

To start this project, it was required to draw on the researcher's knowledge of the field of secondary schools as well as her experience with teachers, administrators, students and their parents/guardians both individually and in groups. It was necessary to generate interest and excitement about the relevance and significance of the project in the school co-ordinators of the project, and hopefully this would be transmitted to the participants. This stage commenced six months before any data were collected, and continued throughout the project until the present time.

An integral part of this stage was the creation of an Information Sheet (Appendix H), explaining the significance, relevance and importance of the project and the value of the co-operation of all participants. This was also the time to clearly present the protocol regarding confidentiality of data, and their intended use (Appendix I).

Recorder, documenter and manager

In this role the researcher recorded and documented the questionnaires and focus group report. All the data had some part to play in expanding the knowledge base of the

participants with regard to the vertical timetable. The

research design was based on the four groups of participants

reflecting on their individual experiences with the vertical

timetable, and building knowledge about themselves and their

experiences with the vertical timetable.

Critical friend

All participants were encouraged to reflect critically on the

way in which the vertical timetable was used to deliver the

curriculum. Hopefully this occurred as the school coordinator

of the project explained the research and the value of the

participant's role in the process. Their experiences were

linked, and the researcher referred those who sought advice

and input to the most appropriate support.

Relationships between the researcher and the participants

The success of this project depended, to a large extent, on

the establishment and nurturing of relationships with the

school co-ordinators of the project. Feelings of trust and

mutual respect are a necessary foundation to a successful

relationship. Whilst every effort was made to establish such

relationships, and to ensure that the expectations and wishes

of these particular participants were met realistically, true

reciprocity was rarely achieved.

Issues that arose for the researcher

The very nature of an inquiry that addresses the lived

experiences of the participants is dynamic. As such, it is

acknowledged that the research could not be set in concrete in

advance. Thus, situations occasionally arose where various aspects were re-negotiated with the participants. The path was not always directly and easily negotiable.

Throughout the inquiry, the researcher was mindful of Morse (1994,225-226) who notes that "qualitative research is only as good as the investigator". Consequently, consistent attempts were made to embrace the practices of: patience, persistence, meticulousness and the ability to recognise key leads.

Limitations of the study

A limitation of an inquiry such as this is that a great deal of the data arose from personal observation and opinion (yet with regard to these being an individual's perceptions when it would be regarded as a strength (Stake 1995)). These subjective methods certainly lacked the so-called quantifiable, tangible methods of some research methodologies. There was always the risk that the observers may have lost their perspective and become blind to, or tacitly unaware of the peculiarities that they were observing (Stake 1995).

Further limitations could have arisen as a result of the reliability of the direct observations made by people inexperienced in this regard. To train these observers would have planted ideas and concepts in their minds. The use of

several observers overcame this limitation to a great degree, thus triangulation of data sources was used.

Throughout this report use has been made of personal anecdotes from the researcher's supervisors and other university staff as well as several educators. This has been done, mindful of the caution of Bryman (1988):

> There are grounds for disquiet in that the representativeness or generality of these anecdotal fragments is rarely addressed.

The researcher believes in the value of these personal snippets as they introduce a human element to underscore the reality and consequent value of the words.

Throughout the data gathering in this research, the researcher tried to remain as unobtrusive as humanly possible, to be "as interesting as wallpaper" (Glesne & Peshkin 1992). It was necessary to balance this stance with that of the researcher being a 'critical friend' when necessary. The possible juxtaposition of these two roles is acknowledged, but the researcher believed that she succeeded. It was impossible to become totally invisible obtaining totally uncontaminated evidence. Thus she attempted to minimise these influences by using the questionnaire. An attempt to reduce the intrusion was made by dealing only with the school co-ordinator of the project, not with the other participants. Another limitation

was the fact that the researcher acted alone and could perform only a certain number of tasks in the time available.

In an attempt to address other areas of potential limitations, attention was paid to four criteria: credibility, transferability, dependability and conformability (Guba and Lincoln 1989). The possible lack of credibility was addressed by clear, in-depth descriptions being given of the parameters of the sample, the context and the conceptual framework. The concept of transferability was addressed by limiting the emergent themes to the sample and not attempting to apply the findings to another context. There has been no attempt to generalise the findings, but is hoped that this report may inform the practices of those educators who are contemplating the introduction of the vertical timetable to deliver the curriculum.

The researcher clearly explained her stance that there are individual interpretations of reality, a view that is the antithesis of positivism, where there is a single, invariable view of reality. This project may be judged vulnerable with regard to its dependability. It is hoped that compensating strengths resulting from the rich, personal data outweigh this limitation.

It is acknowledged that it is not possible to exactly replicate this study, nor is it the aim of research such as this. To address this potential weakness, certain steps were taken to increase the trustworthiness of the research. Firstly, the intrinsic value of the qualitative approach in this instance has been detailed. Secondly, notes have been kept, detailing the decisions and actions taken throughout the inquiry. Finally, all data have been kept in an organised format, so that another researcher could repeat the steps involved in the project, even making use of the same group of schools. Unfortunately, it would be impossible to use the same individual participants as firstly, they were anonymous, and secondly, some of the teachers and students may no longer be at the schools in question. As a result, the inquiry could not be replicated exactly.

Limitations of the questionnaire

There were some potential weaknesses when using questionnaires. This section will present these arguments, as well as describe the ways in which the criticisms were addressed.

A key issue in the use of questionnaires to gather data was the way in which they were distributed. To increase the external validity of the study the researcher took no role in the selection of the participants. The instructions given to

the school co-ordinators of the project were to randomly select the teachers and students to participate. The administrator cohort involved almost all members of the administration team, as there were only two or three, usually a principal and a deputy principal, in the schools. A possible limitation of the questionnaire arose with the parent/guardian cohort. The parents who participated were the parents of the members of the student cohort and there was the possibility that the parents would reflect the views and interpretations of their students. A comparison of the responses from some of the students and their parents was made and there appeared to be some similar interpretations, but not to the extent that the researcher felt that the validity of the project was threatened. Consequently, acknowledgement is made of a certain degree of vulnerability in this regard.

There can be problems with the way respondents express themselves. The first stage of the Preliminary Study, conducted in February and March 1995 before the main project began in February 1996, indicated that some students had difficulties expressing their perceptions and understanding the questions. These problems were addressed in subsequent stages by rewording the questions, using terminology more suitable for younger students.

Limitations could also have arisen from the fact that respondents may have given different responses to the same questions at different times. This potential weakness was acknowledged, but was accepted as being the case with most qualitative data, because of the vagaries of human nature.

The questionnaires produced retrospective data, and, as with similar self reporting techniques, the assumption is that the participants were aware of their own behaviour and were prepared to report it accurately. Some aspects of this shortcoming were addressed by ensuring the anonymity of the responses. The issues of faulty and flawed recollection could not be addressed realistically beyond outlining, in the explanation sheet, the value of the participants' honest and complete co-operation in their responses, and this was done as previously described.

Limitations of the focus group interview

There were several limitations acknowledged when use was made of the focus group method to gather data. The researcher was unable to pilot test the probes in the same manner used with the questionnaires. Consideration was given to the topics and the characteristics of the participants. Such testing was done in several ways, beginning with having experts (experienced researchers who teach research techniques at tertiary level) review the questioning routes and potential

probes. These experts would have to be experienced in such matters, and such people are difficult to locate. In this project, the methods were based on the researcher's experience developed using the focus group interview as a teaching strategy with undergraduate students. This was the case when, from time to time, the discussion on a single point was drifting, it was summarised and the discussion and moved on.

A further limitation of this method was the possible disquiet resulting from the representativeness or generality of the quotes or anecdotes used in the final report (Stake 1995). There can be problems associated with the selection of anecdotes to use in the report. To address this, the tendency to select data that fit the ideal conception of the emergent themes was avoided. Secondly, the tendency to select data that were conspicuous because they were dramatic or opposed to the emergent themes was also avoided (Miles and Huberman 1994). These shortcomings were addressed by utilising the researcher's peers to replicate the selection of the quotes.

At no time was control lost and the participants allowed to influence and interact with each other. Ideally the focus group participants should be unfamiliar with each other, but similar to each other by virtue of a common interest in the topic under investigation (Cuskelly et al 1995, Krueger 1988).

The focus group interview was conducted in a school with

twenty-three teachers and two administrators. Acknowledgement

is made of the fact that the presence of the administrators

may have inhibited full and frank participation by some of the

teachers.

Although a focus group interview may have potential

weaknesses as noted here, potential problem areas were

addressed as summarised in the list below, and, as a result,

rich, credible data were collected in this stage of the

project, using tools suited to this inquiry where a

constructivist paradigm (Guba & Lincoln 1994, Schwandt 1994)

was used to gather the participants subjective interpretations

of the effects of curriculum delivery with the vertical

timetable). Potential shortcomings were addressed by:

- Questions and probes reviewed by experts

- Researcher's previous experience

- Quotations for report selected via peer conferencing

- No interaction permitted between participants

- Researcher retained control throughout interview

(Cuskelly et al 1995, Krueger 1988).

Issues not addressed by the questionnaires

There were six issues addressed by the focus group

interview as seen below. The first two of these were not

addressed directly in the questionnaires and will be discussed

here. The final two issues addressed specific circumstances at the school where the interview was conducted, and have little direct relevance to this project. Thus they will not be discussed in this thesis. They were duly recorded in the minutes of the interview and held by the school.

* Length of units....term or semester?

* Have teachers lost the vision of the vertical timetable?

* Teacher workload, why is it so great? How to address this?

* Is teacher stress real? If so, how to address it?

* Should there be pre-requisite subjects for Year 11 subjects?

* Should sequenced subjects be delivered in sequence?

Length of units of study

All eight participants who spoke on this topic supported the shift from term to semester length units. One teacher suggested that many of the workload problems could be overcome with twenty week units. Three other teachers believed that administration/paper work problem would be halved at least. The researcher was asked if any other schools in the project made use of ten week units. The negative response galvanised the agreement of all present. An administrator agreed to evaluate at the situation. The significance of these issues can be seen in their convergence with two of the three concepts contained in the conceptual framework of this study:

the significance of the structure of the timetable (Allen 1989) and the notions of the construction of the curriculum (Brady & Kennedy 1999).

The suggestion of another teacher that the longer units would allow the subjects to be taught in greater depth, would have positive results regarding the Year 11 subjects, as discussed previously. There was a general consensus on this point.

Two teachers referred to the fact that the increased length of the units would increase the teacher/student contact, addressing a problem issue identified in the questionnaires.

Have teachers lost the vision of the vertical timetable ethos?

The discussion of this issue involved at least fifteen speakers and lasted for thirty minutes of the ninety minute interview, emphasising the importance for those present. All who spoke revealed instances of the loss of the vision or lack of knowledge of the ethos. Two teachers who were relatively new at the school knew only what was in the school handbook. All who spoke accepted the use of the vertical timetable was a fait accompli, and six referred to the need to re-acquaint themselves with the ethos of the vertical timetable. One participant added that such an approach may help to reduce the

culture of negativity present in the school. One
administrator suggested the use of student free days to in-
service the staff, and there was general agreement with this
proposal. The vitality and relevance of this notion is
contained in the practical aspect of one of the three concepts
of the conceptual framework of this inquiry: the issue of the
management of change (Fullan 1993, Fullan & Miles 1992,
Wilenski 1989).

This chapter provides the completion to the study. The
conclusion has been presented in several sections: a summary
of the thesis; the implications of the findings;
recommendations for administrators planning to introduce a
curriculum delivered by the vertical timetable;
recommendations for future study and several methods issues.

The summary of the thesis was elaborated in two regards.
Firstly, the methodological practices with regard to the
appropriate and suitable research design used to arrive at the
findings were presented. Secondly, the summary explained how
the study had deployed the three aspects comprising the
conceptual framing of the inquiry to exemplify the steps to be
taken by those considering such an educational change.

The implications of the study establish its practical
value and its relevance for theory. Practically, these

implications pertain to the steps to be taken by change agents when introducing a vertically delivered curriculum. The implications are derived from the fact that the study has drawn on the notion of change in terms of the learnings and understandings that stakeholders acquire and the understandings they develop as a result of their involvement in the change. In this respect the study relates to the literature on management of change (Fullan 1993, Fullan & Miles 1992, Wilenski 1989), the significance of the school timetable (Allen 1989) and the construction of curriculum (Brady & Kennedy 1999).

The final section of this chapter presented some recommendations for future study related to the experiences of teachers during periods of educational change. In addition, issues methods related to the researcher's role in this inquiry were presented.

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Appendices

Appendix A

Harvard Business Review (March - April 1995)

Organisational change: Why transformations fail?
Eight steps to transforming an organisation

1.   Establishing a sense of urgency

2.   Forming a powerful guiding coalition

3.   Creating vision

4.   Communicating the vision

5.   Empowering others to act on the vision

6.   Planning for and creating short term wins

6.   Consolidating improvements and producing still more
     change

8.   Instituting new approaches

Eight errors that distract transformations

1.   Not establishing a great enough sense of urgency

2.   Not creating a powerful enough guiding coalition

3.   Lacking a vision

4.   Uncommunicating the vision by a factor of ten

5.   Not removing obstacles to the new vision

6.   Not systematically planning for and creating short
     term wins

7.   Declaring victory too soon

8.   Not anchoring changes in the corporation's   culture

(*Harvard Business Review* March - April 1995)

Appendix B

Allen (1989)

Allen (1989) identifies four types of consequences that result from the structure of the secondary school timetable:

- Structure transmits decisions; the structure of the timetable is the means by which the organisational decisions made at one level are experienced at other levels. An example of this can be seen when a decision made to block a core subject at one level will tend to lead to blocking or fragmenting at another (Allen 1989,206). Blocks are merely tools for making decisions. They can be segmented to meet individual choice options as needed. This concept is based on the fact that resources, teachers and facilities, are finite commodities.

- Freedom of choice is costly; this result is of direct relevance to a vertically delivered timetable. The vertical timetable offers a smorgasbord of choices to the students. It permits choices all the time, with students free to move between levels and grades. This is demanding on resources, but the strength of the vertical timetable is the individual choice it affords.

● The allocation of slices of time; the timetable allocates

slices of time to subject offerings. Allen observed in

his project that priorities in some schools dictate that

subjects occur every day, and those offerings linked to

this in the same column (on the timetabling model) will

be allocated correspondingly small time slices (Allen

1989,211). Thus, as Allen notes:

> Some knowledge areas may, even though not
>
> considered intrinsically important, be accorded
>
> priority because they are perceived to be
>
> concerned with esoteric knowledge and therefore
>
> their claim to special treatment is not
>
> effectively challengeable (Allen 1989,212).

● What constitutes different types of knowledge; This

introduces a somewhat speculative area where Allen notes

that some curriculum priorities are evident in timetable

structures even if they are not known or have any effect

(Allen 1989,214).

Appendix C

Administrators' Questionnaires

1   What do you understand by the terms:
     vertical timetable
     unitised curricula

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2   Why did your school decide to adopt these methods of
delivering the curriculum?

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3   How long has this approach been in operation in your
school?

     ....

4   In what ways were the classroom teachers involved in the planning and implementation of this process?

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5   Did you involve the students/parents in this process?

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6   Describe any problems you had with the planning and or the implementation of this curriculum initiative?

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7   What benefits of this curriculum initiative do see that have resulted for:
Administration
Classroom teachers
Students
Parents?

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8   Describe any difficulties that may have resulted from this curriculum initiative for :
     Administration
     Classroom teachers
     Students
     Parents.

9   Describe any modifications that could be made to your present school organisation that would address these difficulties?

10   How has the implementation and or the administration of this curriculum initiative affected you?

11   Any further comments...

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12   Please indicate the reasons why you have decided to
participate in this research?

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Thank you for taking the time to complete this questionnaire

Appendix D

Teachers' Questionnaire

Classroom Teachers' Questionnaire

1   What do you understand by the terms:
     vertical timetable
     unitised curricula

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2   Why did your school decide to adopt these methods of
delivering the curriculum?

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3   How long has this approach been in operation in your
school?

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4   In what ways did the Administration involve you in the
     planning and implementation of this process?

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┌─────────────────────────────────────────────────────────────────────────────┐
│ 5    Were the students/parents involved in this process?                      │
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│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
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┌─────────────────────────────────────────────────────────────────────────────┐
│ 6    Describe any problems you had with the planning and or                   │
│      the implementation of this curriculum initiative?                        │
│                                                                               │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
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┌─────────────────────────────────────────────────────────────────────────────┐
│ 7    What benefits of this curriculum initiative do see that                  │
│      have resulted for the:                                                   │
│      Administration                                                           │
│      Classroom teachers                                                       │
│      Students                                                                 │
│      Parents?                                                                 │
│                                                                               │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
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┌─────────────────────────────────────────────────────────────────────────────┐
│ 8    Describe any difficulties that may have resulted form                    │
│ this curriculum initiative for:                                               │
│      Administration                                                           │
│      Classroom teachers                                                       │
│      Students                                                                 │
│      Parents.                                                                 │
│                                                                               │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
│ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . │
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Appendices

Describe any modifications that could be made to your present school organisation that would address these difficulties?

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10   How has the implementation and or the administration of this curriculum initiative affected you?

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11   Any further comments...

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12   Please indicate the reasons why you have decided to participate in this research?

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Thank you for taking the time to complete this questionnaire

Appendix E

Students' Questionnaires

Students' Questionnaire

1   What do you understand by the terms

    vertical timetable ....
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    ....
    unitised curricula? ....
    ....
    ....

2   For how long has your school adopted this approach to
    learning and teaching?
    ....

3   How was this new approach explained to you, and who
    explained the way the new approach worked?

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    ....

4   Describe how the vertical timetable/unitised curricula
    approach works at your school?

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5   How do you select a course or subject to study?

6   Are you aware of any differences between the approach at your school and that at other secondary schools?

7   What do you like most about the system?

8   What do you like least?

9   What do you see as the benefits for the:
     students .
     teachers
     parents?

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10   What do you see as the difficulties for the:
     students
     teachers
     parents?

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11   What are your personal feelings about this system of
teaching/learning via a vertical timetable/unitised
curriculum?

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Thank you for taking the time to complete this questionnaire

Appendix F

Parents/guardians' Questionnaires

Parents/Guardians' Questionnaire

1 What do you understand the terms:
vertical timetable
unitised curricula
to mean?

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2 For how long has your son/daughter's school adopted this
approach to learning and teaching?

....

3 How was this new approach explained to you, and who
explained this new approach to you?

....
....

4 How do you understand that the vertical
timetable/unitised curricula approach work at your
son/daughter's school?

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5   How does a student select a course or subject to study?

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6   Are you aware of any differences between the approach at your son/daughter's school and that at other secondary schools?

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7   What do you like most about the system?

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8   What do you like least?

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9   What do you see as the benefits for the :
       students
       teachers
    ,. parents?

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10   What are the difficulties for the:
       students
       teachers
       parents?

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11   What are your personal feelings about this system of
teaching/learning via a vertical timetable/unitised
curriculum? .

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Thank you for taking the time to complete this questionnaire

Appendix G

Preliminary Studies 2

The Introduction of the Vertical timetable

1. Why do you think the vertical timetable was introduced at your school?

2. Who benefits the most?   In what ways?

3. What are the advantages of the vertical timetable?

4. What are the disadvantages?

5. Is subject selection (student getting first choice) a problem?

6. How do you think this could be overcome?

7. Is the possibility of lack of continuity between student and teacher a problem?

8. How do you think this might be overcome?

9. Is there an increase in the student workload regarding:
            *assessment
            *assignments
            *deadlines (please give examples)

10. How do you think this could be overcome?

11. How has the vertical timetable affected you and or your student?

12. How do you think the staff (teachers, administrators) have been affected?

12. How do you feel this could be addressed?

13. Has the role of the Pastoral/Tutor/Form group changed with the vertical timetable?

14. (a)What is the role of the school handbook with regard to the vertical timetable?

     (b)What other documents are available for students, parents/guardians, staff and the wider community?

15. Trace the progress of a new student from the day they enrol at your school until they receive their first report. Refer where appropriate to pre-commencement, selection of subjects, allocation to levels etc

16. What is the future of the vertical timetable at your school"

17. Any other comments or observations?

Thank you for taking the time to complete this questionnaire.

Appendix H

Information for Participants

Information sheet for participants in the research project:

Structural change in Queensland high schools

Thank you for participating in this study. Your participation is voluntary and you may withdraw at any time from the project.

This research project is for the purpose of a Doctor of Education degree undertaken within the jurisdiction of the Faculty of Education at the Central Queensland University, Rockhampton.

Background

For many years secondary schools have been generally managed on the particular model where students are divided into their classes on a horizontal or chronological basis. Over recent years, this paradigm has been subjected to change, where, in some cases, division is made according to academic progress or student choice. Thus, more open access of education is being pursued.

Aim of this research

I intend to examine the reasons for these changes, as well as the changes being made. I intend to examine the results of these changes, and particularly, those who are directly affected.

Scope

Developments in two Queensland secondary schools just commencing *unitised curricula* will be studied in detail. I will be comparing and contrasting these developments with those that have occurred in other schools that have made similar changes. in Queensland, other states and overseas.

Your participation in this study as a teacher, school Administrator, school student or parent is appreciated and will contribute to improving our knowledge of this structural change. This should further improve the quality of teaching and learning in a significant area of change being examined for possible implementation in a number of schools at present. The outcomes of this research should help inform such decision making.

Appendix I

Consent Form for Participants

Consent form for participants in the research project:

> ## Structural change in Queensland high schools

Thank you for participating in this study. Your participation is voluntary and you may withdraw at any time from the project.

The information supplied by you will be confidential. At no time will any information regarding your name and details be released, either during the study or in the publication of the results. Acknowledgments will be made only if such consent is given.

All data will be collected by the researcher and will be stored securely in the Faculty of Education at the University of Central Queensland.

If you require any feedback on the inquiry or wish to view a draft copy of the thesis, please complete the section below with your name and return to the researcher.

I wish to receive some information regarding the findings of this research.

. . . .

Appendix J

Parental Consent Form for Students

Parental consent form for student participants

in the research project:

Structural change in Queensland high schools

Your son/daughter attends a high school that is participating in research on the above topic. A copy of the Information Sheet is included for your perusal. Your permission is sought to permit your child to take part in interviews or observational situations.

Participation on this project is entirely voluntary and you may withdraw your consent at any time.

The information gathered in the process of this research will be confidential. At no time will any information regarding names or details of participants be released, either during the study or in the publication of the results. Acknowledgments will be made only if such consent is given.

All data will be collected by the researcher and will be stored securely in the Faculty of Education at the University of Central Queensland.

If your permission is not granted, please contact the school. If you require any feedback on the inquiry or wish to view a draft copy of the thesis, please complete the section below with you name and return to the researcher.

I wish to receive some information regarding the findings of this research.

. . . .

I give permission for my son/daughter to participate in this research.

. . . .