

**RE-ENGAGING STUDENTS IN THEIR LEARNING THROUGH MIDDLE
SCHOOL REFORM: A CASE STUDY EVALUATION OF A VERTICALLY
STRUCTURED CURRICULUM.**

**Submitted by
Mellita M. Jones
Bachelor of Applied Science, Graduate Diploma of Education (Secondary)**

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**School of Research
Faculty of Education**

Australian Catholic University
Research Services
Locked Bag 4115,
Fitzroy, Victoria 3065
Australia

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Statement of Authorship and Sources

This thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

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This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

All research procedures reported in the thesis received the approval of the relevant Ethics/Safety Committees (where required).

Mellita M. Jones
January, 2005.

ABSTRACT

The phrase “middle schooling” refers to the school setting for adolescent students generally between the ages of 11 and 15 years of age (Lawton, 1999). This period of time has been recognized on a national level as being particularly significant in education. A call for reform in upper primary and lower secondary to address the understanding of adolescents in a complex and changing society has been recognized publicly at a federal and state level (Lawton, 1999). This research evaluates the redesign of one middle school’s structure through the implementation of a vertical curriculum in a catholic secondary college in a country town. The program has been in place for three years in the college and the need to evaluate it takes on significance for the college itself, and the wider educational community who have been discussing and researching middle school curriculum design for a number of years. Research methodology takes the form of attitudinal questionnaires administered to parents, students and staff in the college. Quantitative analysis using descriptive statistics is used for closed questions to look for significant differences between the parent, student and teacher attitude towards the philosophy and delivery of the vertical structure. One-way ANOVA and MANOVA analysis revealed that parents, students and staff were all supportive of the new structure and its driving philosophies, although parents scored significantly higher on the scales examined than staff or students. Correlations and Chi Square analysis were applied to selected scales, revealing overall that the outcomes of the vertical curriculum are being met. A number of areas were also identified as needing improvement, with areas of emphasis differing for the parent, staff and student groups in the community.

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CHAPTER 1

INTRODUCTION

“It is now well recognised that the Middle Years of schooling (Years 5 to 9) are a time that students disengage from learning, classroom activities, teachers and their schools. Many of our schools and thus the classrooms reflect a factory model of learning and teaching. Students are taught material which for many of them is irrelevant”.

(Melbourne Catholic Education Office, 2002)

Vertical Curriculum is a curriculum structure alternative to the traditional year levels that form the grouping of students in most conventional secondary schools. The idea behind vertical curriculum is to individualise curriculum and make learning more relevant and engaging for students.

This study examines the vertical curriculum structure at one Catholic secondary college three years after the structure had been implemented in their middle school (Years 7 to 10). The school implemented the vertical structure into its curriculum in an effort to address middle school issues that were primarily identified through the Middle Schools Conference: Redefining the Middle Years of Schooling held in Melbourne Victoria in 1997. Staff also contributed to the identification of key issues they felt was manifested in the middle school.

The application of vertically re-structuring the curriculum in this particular case involved Years 8 thru 10 and the second semester of the Year 7 curriculum being delivered according to levels of the Victorian Curriculum Standards Framework Draft II (CSF(II)). Students selected units offered with varying themes within each Key Learning Area (KLA), at a CSF level that is recommended to them by their teachers. This enabled students to select units whose themes were of particular interest, or at least to avoid units whose themes held no interest for them, whilst hopefully accessing the different areas of

the curriculum at a level that was appropriate to their level of development in the given KLA.

A survey method, using quantitative analysis is adopted in this study through the use of questionnaires to measure the attitudes of the parents, students and staff at the school towards the vertical curriculum structure. The aim of this evaluation, drawing on the attitudes of the three main bodies in the school's community, the parents, students and staff, is to determine the self-reported success of the structure; in the eyes of the community, is the structure meeting the outcomes intended by the staff? And are there aspects of the administration of the structure that are perceived as needing improvement?

Research Questions

The impetus for this study was to evaluate the vertically structured curriculum three years after its introduction in a country secondary college. The evaluation looks to assess the attitudes of the school community; that is, the parents, the students and the staff of the college, about the vertical curriculum structure. The aim of this was to determine whether the school community felt that the intended outcomes were being achieved and whether the philosophies behind the implementation of the program were being met.

Whenever a new program is introduced in any organisation, certain beliefs and philosophies drive its implementation. The organisation must believe that the new program will achieve outcomes it has identified as desirable. If the program is a suitable one to achieve these outcomes, the manner in which it is introduced can still either compromise or allow these intended outcomes to be achieved. When a program fails to achieve the desired outcomes it is not always because the philosophy is flawed, but rather that its administration is.

The evaluation in the present study attempts to recognise these two factors. Do the parents, staff and students believe in both the philosophy and the administration and delivery of the vertical curriculum, or, if they do see flaws with the structure, do the flaws lie in the philosophies behind the program or in the manner in which it is administered? Consequently, the evaluation is conducted in two parts: In the view of each of the three contributing bodies of the school community (parents, staff and students):

- 1) Does the vertical curriculum structure at the college enable the intended outcomes identified at the time of implementation to be met?
- 2) Does the manner in which the vertical curriculum structure is administered at the college allow the outcomes to be realized?

The study also considers the question: are there any significant differences in attitudes between the parents, staff or students groups towards the vertical curriculum structure and/or its administration?

The Context of the Study

The school used in the present study was established in 1995, the result of an amalgamation between three Catholic schools. The first, run by Mercy nuns, providing secondary catholic education for girls up to Year 10. The second, run by the Christian Brothers, was a technical school that catered for boys from Years 7 to 10. When the State government phased out technical schools an academic education was added to the strong technical provision. The third school was a senior college initially catering for Year 11 and 12 students from the first girls' school and was also run by the Mercy Nuns. In 1990 the college became co-educational and boys from the technically focused second school, seeking education beyond the compulsory years, joined the senior girls.

In 1995 amalgamation of the three schools was undertaken. The new school operates off two campuses: Years 7 to 9 are based at one campus, located on what was

previously the site of the technical school. Years 10 to 12 study at another campus, previously the site of the senior school. Many of the staff from the three parent schools remain on staff to this day, and the school is slowly developing its individual culture.

The mission statement of the College was defined in the year of amalgamation and was used to provide direction when the Vertical Curriculum project was implemented in 2000, and in the planning that led to its implementation. The college aims to be a “Christ-centred community” that focuses on a number of elements related to the education and well-being of the students in a Catholic context. The Vertical Curriculum aims to help the College better realize the aims of the mission as well as address current educational challenges related to the engagement and motivation of students in the middle years of schooling.

The Vertical Curriculum Project was implemented at the College in 2000 in an effort to better engage individual students in their learning by reforming the structure of curriculum delivery. The impetus for this was tied to the response made to issues raised at the Middle Years Conference: Redesigning the Middle Years held in Melbourne, Victoria in 1997. Key issues were identified in relation to meeting the needs of individual students. In particular, it was advocated that all students should have the opportunity to study at an appropriate level at which they can experience success in their learning. Additionally, students would be more engaged in their learning if they could study in areas of interest. This would be impossible to achieve in the traditional horizontal curriculum structure where students are grouped by age with no real consideration of their ability in different areas of the curriculum or in their particular interests.

The Vertical Curriculum at this school offers a range of units within each area of the curriculum at different levels. This is done in an attempt to enable students the opportunity to study different areas of the curriculum at different levels that hopefully link

to their level of ability as well as enabling them to select from a variety of units within each key learning area to cater for their interests. Units are written to cover outcomes of the Curriculum Standards Framework (CSF) II and are offered at CSF II levels.

Staff and students receive a handbook each year where details of the program are listed and descriptions of the units on offer are provided for each key learning area of the curriculum. Students are encouraged to discuss their interests, abilities and options with their teachers and parents and to fill in a Unit Selection Form. Time is then provided at school where students can discuss their selections with staff to ensure that they are selecting units at an appropriate level and that a balanced approach to the curriculum is maintained. Seven selections are made each semester. These selections are then used to design a timetable that best meets the students' preferences. Students are consulted if changes to their initial preferences are required due to timetabling constraints. Parents, students and staff also have the opportunity to alter the selections in the early weeks of each semester if they feel an inappropriate selection has been allocated.

Purpose of the Study

The process of evaluation and review is an integral component of effective school improvement programs. It is only through an ongoing process of evaluation and review that areas for improvement can be identified, the processes of improvement monitored, and progress towards improvement verified (Reid, Hopkins & Holly, 1987; Piper, 1989; Gray, Jesson & Sime, 1991; Stoll, 1991). Upon implementation of the vertical structure, the plan to review how well it was perceived to be achieving its aim of better engaging and motivating students in their learning was set for two years. This review was intended to measure the perceived success of the new curriculum structure in better engaging students in the middle

years as well as how well it appeared to be achieving other outcomes identified in the planning period that link to the College's Mission Statement. It was also intended that any administrative practices that were compromising the success of the project could be identified so that staff could plan improvements for the future.

The purpose of the study is thus to provide a measure of the perceived level of success in achieving the outcomes behind the introduction of the vertically structured curriculum program as well as to identify areas of the program that are perceived as needing improvement. This way the school in the study will be able to develop areas of the program confident that they are working in areas that are perceived as needing improvement.

Statement of Aims

The study is expected to:

1. Identify and measure the strengths of the Vertical Curriculum as perceived by the students, parents and staff of the school in an effort to assess how well the program is meeting the set outcomes.
2. Identify aspects of the Vertical Curriculum that students, staff and parents of the school perceive to need improving to better meet the outcomes of the project.

These aims led to the identification of a number of key research questions:

1. Are attitudes towards the vertical curriculum structure related to the gender, the age, the year level, the number of years in teaching or the attendance at information evenings by parents, students or staff?
2. Is students' choice and decision-making about their learning programs related to motivation and engagement in their learning?
3. Is there a relationship between allowing students choice and decision making about their learning programs and their sense of ownership of their learning program?
4. Are students able to access units of study at the appropriate level for them, across all key learning areas?
5. Are life skills such as long term planning and responsibility promoted by expecting students to plan a pathway through the non-compulsory years?

6. Are relationships between staff and students, staff and parents and parents and students enhanced through students experiencing a greater sense of valuing because they are given the opportunity to discuss and plan for their individual interests with staff and parents?

Impacting on the actual achievement of these outcomes is the manner in which the program is administered. To evaluate this, the following question is also posed in the study:

7. Are there statistically significant differences in the level of agreement between parents, students and staff believe that:
 - a) there is an appropriate level of choice available?
 - b) unit selections are made according to interest and ability?
 - c) the appropriate level of information and advice is available regarding selection of units.
 - d) that a vertical structure is a better way of delivering the curriculum?

The Significance of the Study

The present study is of particular significance to the city's community. For the school be successful, they need to know that they are an attractive alternative for parents and students who are deciding where they will undertake their secondary studies. The curriculum is often a strong driving factor for parents and students who are making this decision. Hence, it becomes important that the vertical curriculum is an attractive feature of the schools' make-up. The college is also driven intrinsically to know that they are providing the best education they possibly can. Hence the findings of the present study take on particular significance to the College. Findings should reveal how students and parents perceive the curriculum structure as well as expose how the college staff feel about what they are doing. This means that any successes identified by the study will allow the staff an opportunity to celebrate the work they have put into setting up the vertical

structure. It also means that staff can identify what is not working so well and develop methods to improve these factors.

The study is also significant in a wider educational setting as it addresses issues in line with the topic of systematic reform in school communities, a topic dominating current research and thinking about curriculum delivery. The topic of systematic reform in education has had an increasing profile over the last 15 years with a particular focus on middle years schooling. The issues driving the cry for reform stem from the perceived need to re-engage students in their learning. Vertically structuring the curriculum is one example of this reform and hence the findings of this study could help other schools and researchers examine the impact of such a reform. The study could also have particular significance to other schools that are considering a vertically structured alternative to curriculum delivery.

Limitations and Delimitations of the Study

The Vertical Curriculum project was undertaken in an attempt to address issues associated with the disengagement of students in the middle years of schooling. Generally the middle years of schooling incorporates the last year of primary schooling through to the first few years of secondary, although researches differ in the beginning and end points, classifying them from as early as Grade 5 to as late as Year 9. The College in this study is a secondary school for students in Years 7 to 12. The vertical curriculum is accessed by students in Years 7 to 10 and thus the study is limited within this bracket.

While driving factors behind the vertical curriculum relate to middle school issues, the study itself is limited to looking at the effects from Year 7 and above only as the college does not have primary school levels. Year 7 and Year 12 students and their parents will be omitted from the data collection as Year 7 students will not have experienced the

structure at the time of data collection. Year 12 students only experienced the first year of the structure and this was three years ago. This gap in time since they accessed the vertical program may lead to unreliability in responses due to recall. Also, a number of changes were made to the structure after the first year and Year 12 students would not have experienced the program in its current organization, again threatening the reliability of results.

Whatever the methodology applied, there are bound to be associated limitations with the design. The present study is essentially quantitative in nature. The greatest strength of the quantitative method, when designed well, lies in its validity and reliability (Wiersma, 1991). However, this is only a strength if the design allows for strict control of variables and independence of data. Thus the greatest strength of the quantitative method could also potentially be seen as one of its greatest weakness. The reliance on the skills of the researcher seems a significant risk in producing the reliable and valid data that allows quantitative research to so convincingly explain and answer research questions.

Another factor that can be viewed as both a strength and weakness associated with the quantitative method lies in its inflexibility. "Quantitative research typically has a more structured design from the outset and there is little, if any, deviation from this design during the study" (Wiersma, 1991, p. 96). This is the strength of the method if the design was valid and reliable to begin with, as the structured and systematic feature of quantitative research allows a strong empirical study (Wiersma, 1991). However, this is a severe weakness if there are design flaws. If a flaw in the design emerges to do with recognizing and controlling the variables, it is too late to correct the procedure once the study is underway, and the study loses its validity. The whole purpose of the quantitative study is to identify a cause and effect, or relationship between variables and if the variables are confounded by extraneous variation then the effect can not be attributed to the cause being

tested. The naturalistic or ideographic approach of qualitative data allows the design to be shaped and altered with the collection of data (Glense & Peshkin, 1992). So here lies a prime example where the strength of qualitative research actually defines the weakness of the quantitative method.

Extensive research into sound methodology was undertaken and implemented to ensure that potential design flaws associated with the quantitative approach are avoided and minimised. This ensures that the design allows for appropriate use of quantitative analysis, giving valid and reliable results. Further discussion of the design and methodology can be found in Chapters 3 and 4.

Another limitation of the quantitative approach can lie in the restricted information provided by the data. Qualitative researchers argue that quantitative data lacks the richness of information provided by qualitative research, which allows an illumination and understanding that is lacking in the quantitative method (Patricia, 2001). “Quantitative data often produces banal and trivial findings of little consequence due to the restriction on and controlling of variables” (Burns, 1994, p. 10). Crotty (1998) also explores this weakness of the quantitative method:

If we seek to be consistently objectivist, we still distinguish scientifically established objective meanings from subjective meanings that people hold in everyday fashion and that best “reflect” or “mirror” or “approximate” objective meanings. We will accept of course that these subjective meanings are important in people’s lives and we may adopt qualitative methods of ascertaining what those meanings are. This is epistemologically consistent. It has a downside, all the same. It makes people’s everyday understandings inferior, epistemologically, to more scientific understandings. In this way of viewing things, one can not predicate of people’s everyday understandings the truth claims one makes for what is scientifically established.

(Crotty, 1998, p. 15-16).

In other words, quantitative data is still afflicted with subjectivity of the participants and what they subjectively understand scientific truth to be. Borg (1987) explores this theme also. He states that interpretation of research is almost always influenced by

personal experience and hence the researcher can never be truly objective. Although this subjectivity is minimized by the quantitative approach, it still presents a flaw in the quantitative research paradigm that calls strongly for objectivity. Van der Veer Martens (2003) tells us the quantitative researcher's objectivity can however, be enhanced if the researcher decides in advance what kind of results will support the hypothesis and what results will not support it.

The nature of the present study examines a school looking at the attitudes of its community members. Thus the risk of too much subjectivity becomes a mute point. When researching attitudes it is expected that the responses will be subjective and dependent on the individual participants' experiences. Thus the purported subjectivity associated with the quantitative approach are outweighed by the strengths that only the quantitative approach can lend the researcher to examine the attitudes and form generalisations for the population.

Descriptive statistics has been applied where possible in the present study due to the reliability and validity it offers through statistical analyses. Some concerns however are associated with the statistical analysis and lie in both the fundamental nature of statistics and interpretation and communication of the analyses. "For statistics, classifications have to be of a hard and fast type" (Wilson, 2002). This sees quantitative research often forcing responses when people may not fit exactly into categories offered (Howell, Hee Park, Millar, Sattler, Schack, Sperry & Widhalm, 2003). Wilson (2002) tells us that this can create a tendency for an idealization in the findings of quantitative data. In recognition of this a category is included to enable participants to respond with "Don't Know". Consequently they are not forced to respond in a fashion that would idealise the overall findings.

Statistics used in a hard and fast fashion can tend to sideline rare occurrences without consideration to any significance they may have had. It explains the general trend, but not the individual story. Statistics also relies on sufficient sample size and often the research is undone barely before it gets off the ground as the tendency is that people do not respond or return questionnaires (Gray, 1999). Any effort to improve return rates usually greatly increases the cost of the study (Jackson, Kezar, Kozi & de la Alas, 2000).

One of the greatest weaknesses associated with statistics lies in the interpretation and communication of the statistical analyses. “One of the greatest challenges facing researchers is communicating their results to others” (Black, 1999, p. 304). Burns (1994) notes that the vast quantity of numbers that can characterize a quantitative study are not easy to assess. Most researchers are statistically literate, but without a solid background, findings can easily be misinterpreted and/or misrepresented, thus leading to the sorts of phrases such as Disraeli’s often quoted dictum: “There are lies, damn lies and statistics” (as cited in Bryman & Cramer, 1990). Neuman (1994) also explores the problem:

...it is easy to slide into using the causes or behaviour of micro-units, such as individuals, to explain the actions of macro-units, such as social institutions. What happens among units at one level does not necessarily hold for different units of analysis.

(Neuman, 1994, p. 106).

Jackson et al. (2000) indicates this common occurrence of researchers not sampling randomly from a frame that closely coincides with the population of interest. They urge that caution should be applied in generalizing the results beyond the cases actually studied. The consequences for not yielding such caution is given by Black (1999): “...incomplete or even incorrect explanations lead to poor if not disastrous decisions” (p. 2) and thus we would undo the primary purpose of educational research – to inform educators and policymakers to enhance intelligent decision making (Borg, 1987).

The present study is primarily quantitative in nature. In addition to the careful design and methodology employed, other considerations were made to minimise the weaknesses associated with the approach, whilst capitalising on its strengths. In order to address some of the risks associated with interpreting quantitative data, qualitative data is also collected in the questionnaires through the use of open-ended responses. This allows for some of the rich and in-depth response opportunities associated with qualitative research by giving participants an opportunity to clarify their responses in the attitudinal scales used in the closed questions, lending strength to the interpretations made in the findings. The individual story protected in qualitative research is not of primary concern in this study as it is the overall trend in a large community that will allow a general picture of where success lies in the program, and where improvement is needed. Additionally, significant sized samples of parents, students and staff are included to improve the likelihood of meeting sufficient sample sizes required for reliable statistical analyses.

The statistical tools selected for analysis such as one-way ANOVA, MANOVA, Spearman's Rank Order Correlations and Chi Square test for independence all have assumptions built into them that may be threatened by the ordinal nature of the data being analysed. These assumptions were tested and are reported on in Chapter 5. Data collection is achieved through the use of five-point Likert scales which do "not claim to be more than an ordinal scale" (Burns, 2000, p. 338) yet are often, as is the case in this study, assumed to be interval in analysis techniques that are applied. In particular one-way ANOVA assumes continuous numerical data. The data collected in the present study is categorical and ordinal in nature. The ordinal nature of the data allows a numeric coding, but we still end up with discrete rather than continuous values.

The problem associated with using ordinal data in an interval fashion is explained by Foddy (1993) as he describes the manner in which respondents select their responses on

a categorical, ordinal scale: “the tendency for respondents to choose central response options rather than extreme ones, to agree rather than disagree, to be positive rather than negative”(p. 167). This implies that there may be a far smaller interval between categories of central response (Agree, Disagree, Don't Know) than there is between the extreme categories such as for example between Strongly Agree and Agree. However, Burns (2000) acknowledges that many researchers successfully use such data as interval. Cramer (1994) also reveals that whether the interval nature of data must be established before a non-parametric test such as one-way ANOVA can be used has been seriously questioned and provides evidence that results have little difference when data is ordinal, interval or ratio. The testing of these and other assumptions tied to the statistical tools will be carefully considered and reported in the results.

Error and bias may also present due to the problems inherent with respondents interpreting closed questions in the same way. In addition, attitudinal responses do not take into account cultural or socio-economic factors that may influence attitudes and hence the measurement is of attitudes that are present for reasons other than the topic being investigated (Burns, 2000). Whilst the college used in the study has a relatively homogeneous culture, the socio-economic status of students attending the school is quite diverse. The use of open-ended questions give participants an opportunity to clarify their responses, and if socio-economics does influence the trends in responses, then it is a good thing for the school to be able to identify as they will either be revealed as supporting the program or contributing to features that require improvement. Even if the improvement is based on socio-economic status if this is what influences responses, the school still needs to respond and cater to the needs of its community.

Measurement of attitudes may be made for comparison purposes but the reasons for these attitudes will not be explored in any great depth. Open ended questions will be

included on the questionnaire and these too may be subject to interpretative bias, as follow up questions/interviews have not been considered at this point. The Hawthorne effect of reactivity to being studied may also see participants responding in a manner that they think they should. Further reactivity may also limit the validity of findings based on what Smith and Glass (1987) refer to as the novelty effect, the effect of something new which may wear off over time. The vertical curriculum is still a relatively new program and may be subject to the novelty effect. These factors can not really be accounted for in the present study, but reviews of the structure held in the future can either support or contest the findings made here.

I have limited the study to include in the sampling only the staff, students and parents who are currently part of the school's community. Staff and families who have left the college, even though they may have experienced the vertical curriculum, will not be included. This may of course compromise the findings if the vertical curriculum structure formed part of their reason/s for leaving. It may also detract from any supportive findings uncovered in the study if they found the structure favourable but had to leave the college for other reasons. This is supposition though, as their reasons for leaving may have just as easily had nothing to do with vertical curriculum.

The findings of the research are limited to the local setting and can not be generalised to other vertically or otherwise, structured schools.

CHAPTER 2

LITERATURE REVIEW

“The school curriculum is a social artefact, conceived of and made for deliberate human purposes. It is therefore a supreme paradox that in many accounts of schooling the written curriculum, this most manifest of social constructions has been treated as a ‘given’”.

(Goodson, 1994, p. 16)

“The curriculum is central to schooling. It expresses the school’s intentions and directs the students’ activities and learning” (Piper, 1992, p. 35) and yet schools since their inception a few short centuries ago have changed little in their overall structure. Does this mean that since the inception of schooling the intention of schooling for its students has remained unchanged? School practices are generally taken for granted according to Brennan and Sachs (1998) because what seems “natural” is so only because it is developed over several centuries without much question. Schools whilst operating within the same basic structure have however made significant ground in curriculum provision, responding to the demands of community, society, politics and economics.

Schools are not only expected to provide cutting edge methods, and training for students in relevant skills, they are also expected to illicit students’ best efforts towards realizing an achieving society and are a major factor in societal achievement.

(Maehr & Yamaguchi, 2001, p. 123).

Never before have schools had to be so accountable to the significant number of outside bodies calling on them to produce students of a certain calibre. As Maehr and Yamaguchi (2001) explain, a society’s schools take the blame when productivity objectives are not met. As the community itself diversifies, so too have schools had to diversify to cater for their students and prepare them for active citizenship. Many calls are put on the curriculum to ensure students are addressed on important social issues while still

receiving the “basics” expected of an educated person. As schools increasingly concern themselves with their crowded curriculum their students appear to be becoming more and more disengaged from what is supposed to be preparing them for this active citizenship. Furthermore, there has been increasing recognition that conventional approaches to curriculum, pedagogy and organisation that have been in place for centuries are not in the best interests of all young adolescents and their communities (Cumming, 1998), nor in fact in the interests of achieving the increasing demands of a changing society.

Stringer (1997) indicates that “even those who get through school relatively successfully talk about being bored, about school being irrelevant and not linked to their personal and social concerns, particularly during the years normally attributed to secondary schooling” (p. 22). Negotiating curriculum is one means through which students can share authority and thus how educators can promote engagement in the classroom, by helping teachers meet students where they are (Kordalewski, 1999).

This research is concerned with how to achieve student engagement in the secondary classroom so we, as educators, can better prepare all of our young people for the citizenship in which they will be expected to take part in post compulsory education. This is examined in light of the case study school used in the present research and its efforts to address the issue of student engagement, through a re-structuring of their curriculum which aims to involve students in decision making about their learning programs to better meet their interests and abilities.

Student Engagement

The middle years have been identified as “the years when students either turn on or turn off to school” (Gude, 1999) and is a term used to describe the phase of schooling that bridges the transition from primary to secondary school life (Cumming, 1998). Success in

this period is essential for the ongoing education of students both to the end of Year 12 and in their attitude to life-long learning as it is in this period that later pathways are set in train (Brennan & Sachs, 1998). There is not a lot of agreement on the start and end points defining the middle years of schooling, but is generally referred to the last one to two years of primary schooling through to the first two to three years of secondary. Gude (1999) states that the switching on or off by students in this period has implications for the social and economic fabric of our entire community and hence it becomes crucial that students in the middle years retain an interest in learning and that schools and their communities ensure that their students are prepared for and interested in ongoing study, training and employment. This is linked to the demands society has on its citizens to further its progress and standing either in the broader community context or even on the world stage. Linked to this are current economic and political agendas that call for increased retention rates through to year 12. This is somewhat difficult to achieve if students are becoming turned off school sometimes before they even enter the secondary arena. Thus the question is raised: How can we ensure that as many students as possible turn on to school?

Piper (1992) reports on effective schools research to reveal that the structure or form of the curriculum and its implementation was identified by parents and educators across one quarter of all Australian schools as the top category by which Australians identify how the curriculum makes a school effective. Responding more effectively to the specific developmental and learning needs of students has been the impetus for many research projects and reform models proposed for schools. This has been attempted in many ways over the years including remedial programs such as “Recovery Reading” for students struggling with learning to read. There are also well known accelerated programs for the “gifted and talented”. Others include open classrooms, thematic teaching, and the multi-aged classroom that is common in primary schools. All of these approaches are concerned

with allowing flexible delivery of learning outcomes to better meet student needs. More general research has also been conducted on improving classroom practice, catering for the multiple intelligences taught by Gardner, different styles of learning and many more dating back to Piaget and Vygotskian theories of learning. Brennan and Sachs (1998) inform us that to some extent, all have met with success, however, for the most-part, this success is short-lived. What we need to establish is a long-term success that produces fundamental change, as distinct from superficial change, in the middle years (Cumming, 1998). The 2003 Partnering Agreement released by the Victorian Government instructs schools to develop policies and strategies to support individual students which may include, among other ideas, the creation of a managed, individual pathway to assist students in out of home care transition to further education and training. If this is feasible for students in out of home care (and we do not want to ostracise these students), surely the same can be provided for all students? The key element or purpose of all theories and strategies in improving learning for students is based on the same premise: to improve learning experiences and outcomes for students by responding better to their learning needs.

To address teaching and learning in order to better accommodate students needs obviously requires some consideration of what these needs might be. Much of the research in this area indicates the fundamental need to recognize that the middle school deals with students who are making the transition between childhood and adulthood (Barratt, 1999; Cove, 1996; Kiddey, 2001; Lawton, 1999; *Junior Secondary Review: The education of young adolescents*, 1992). Schools are often preoccupied with what is in the curriculum and consequently, other aspects affecting the persons learning, and what puts them in a position to best learn, are often ignored or overlooked. Lawton (1999) says we must recognize that students are maturing intellectually socially, emotionally and physically.

Often in schools we focus on the intellectual development irrespective of the student's social, emotional, and even physical development. This is possibly even more significant in the middle years when adolescence and puberty are likely to be among the most significant factors in a student's life as is recognised by Cumming (1998). Cove (1996) reminds us that it is not just intellectual development and curriculum that determine students' participation in the classroom but that cognitive, social, and emotional processes are inextricably linked and depressed mood states are often correlated with decreased motivation in the classroom. Barratt (1999) states that the middle years of schooling need to provide opportunities for young people to learn and grow in ways that acknowledge and respect this unique and special phase of their development. Kiddey (2001) also recognizes that learning outcomes can be greatly affected by these factors and he urges that they must be addressed directly in teaching and learning programs.

Research into making schools more effective revealed the value that Australian school communities hold in developing the emotional well-being of their students as well as intellectual development (Banks, 1994). This broad concept of students' needs in the middle years is difficult to address without breaking down the specific ideas associated with the needs of students. The collective Australian view of the specific needs of students in the middle years coming out of the National Middle Schooling Project (1999) include:

Identity

How individuals and groups are shaped by social and cultural groups.

Relationships

Develop positive and affirming with adults and peers where difference and diversity are respected.

Purpose

Create purpose through opportunities to negotiate learning useful for the present and the future.

Empowerment

Provided through opportunities to act independently, co-operatively and responsibly.

Success

Brought about by having multiple opportunities to learn knowledge and skills that are valued, as well as the opportunity to use talents and expertise.

Rigour

Established through learning challenges characterized by high expectations, and constructive and honest feedback.

Safety

Ensure learning can occur in a safe, caring and stimulating environment.

(Barratt, 1999).

The key phrase from this list that can in fact be applied to all of the factors is “where difference and diversity is respected”. While it refers specifically to the development of positive relationships in this instance, it is also underlies the many ways we can consider students needs: difference and diversity in culture, social status, socio-economic background, peer groups, personal needs, learning needs, interests, abilities, etc.

Students often obtain their identity from their home life, their peers, their cultural background, environment and many other things. Each of these can have significant diversity. So, how can schools cater for such a potentially huge range? School identity can be formed through classroom groupings and/or pastoral groupings such as homeroom groups that are popular structures in Victorian schools. This can also tie in with the second point identified in the research that the development of positive relationships with adults and peers are important. This was also a finding in research on Making Schools More Effective (McGaw, Piper, Banks & Evans, 1992) where Banks revealed that parents and educators saw a key to school effectiveness being that teachers establish and maintain good relationships with students, which again requires respect for difference and diversity.

Creating purpose and meaning for students in their learning programs assumes some level of consideration for difference and diversity as each of the students we encounter at school, as with each and every person we encounter through life, is individual in their

particular interests and abilities. This concept is linked to the idea of creating purpose for students, empowerment and success as listed above by Barrett (1999). I believe this is the critical feature of engaging students in their learning in the modern school and is the basis for the later discussion on why school structure is in need of reform.

McInerney (2000) tells us that everyone agrees that a key factor in successful learning is a learner's motivation and there is a myriad of elements that contribute to the engagement of students and their motivation to learn, including the discussed consideration of their needs. McInerney (2000) states that there is limited agreement on which of these elements are most essential. Michael Barber (1999) believes that success for individuals is one of the major contributors to their motivation. Research supporting this suggests that a significant number of students are experiencing underachievement, anti-social behaviour, lack of enjoyment and alienation (Gude, 1999). The type of motivators facing students is also important, where extrinsic motivators may have a short term effect, but it is the intrinsic motivators that provide an environment more conducive to learning (Lashway 1999). Responding better to students needs could be a more successful strategy in providing this intrinsic motivation.

Self concept is also a contributor to the motivation of individual students. Poorly motivated students often have poorer self concepts than other students (McInerney, 2000). Self-concept can be closely linked to success of students in coping with challenging tasks. The traditional school structure fails the high achiever where they are often encouraged with feedback of "good work" where in reality they may not have been working much at all because the work is too easy (Bechtol, 1993). The student struggling to achieve will get to the point where he/she can not even see the point of trying because success is so far out of his/her reach. Yet students like this are usually promoted through the system with little regard for this lack of success or the ever widening knowledge gap. As mentioned earlier,

if they are held back, statistics show that they are four times more likely to drop out than those who have not been held back (Bechtol, 1993). Mortimore, Sammons, Stoll, Lewis and Ecob (1988) tell us that effectiveness is defined as a measure of a school's success of increasing the learning of all of its students.

The development of self esteem and feelings of self-worth are also seen to emerge from success in academic achievement alongside other factors such as participation in decision-making (*Junior Secondary Review: The education of young adolescents*, 1992). Banks (1999) reports on findings of effective schools research also indicating that shared decision making and collaboration were important with the inclusion of students in the decision-making process. Piper (1992) reveals that parents and educators around Australia felt that students needed to have "some input into what they learn about and the ways they learn it" (p. 43), although this was not the most significant finding with only around 3% of the responses linking to student involvement in the decision-making process. In spite of this 51% of respondents in this research nominated relevance being an essential feature of the curriculum. Relevance in this instance was referred specifically to the need for curriculum to have personal relevance to the needs, interests and abilities of the individual student, and as Piper (1992) highlights, this implies that curriculum needs to be flexible so it can be adapted to individual student needs.

The major difficulty to ascertain is how can we obtain such relevance, especially in regard to students' interests, without actually involving the students in decision making about their curriculum program? The findings where student involvement in decision making reached only the 3% mark implies that educators/parents/society believe that they, and not the actual students, can nominate what is relevant for them. This parody is compounded by the fact that we live in an age where a significant proportion of the jobs that will exist by the time current secondary students enter the workforce do not even exist

yet. How can we determine what is relevant for students? Does involving them in decision making in fact increase relevance for them? It would seem logical, even obvious, but the results here indicate that the level of students' involvement is not rated highly. McGaw (1992) also highlights for us that there are very few research studies available that detail what students think.

Tied to the success of student learning and hence their self concept and motivation is the level of expectation placed on the student. Raising expectations is critical in the development of students self-esteem, where the two occur simultaneously (Barber, 1999). Barber highlights this point with his self-esteem matrix shown in Figure 2.1.

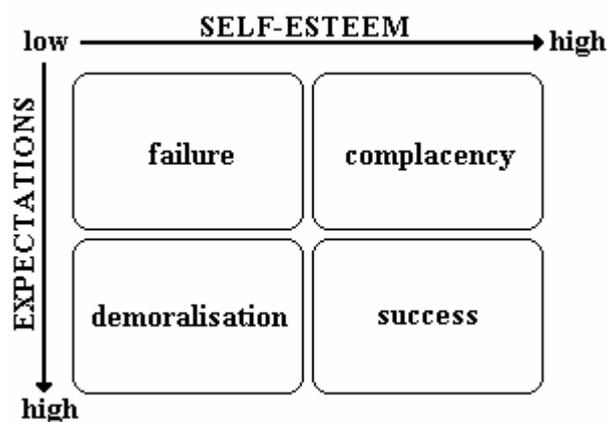


Figure 2.1 Barber's (1999) Self-Esteem Matrix

Barber (1999) indicates here that if school and staff expectations of a student are low and this coincides with low self-esteem of the student then failure in school programs is highly likely. If however we can work the continuum of expecting more from our students whilst building their self-esteem, success is a far more likely outcome. There is a delicate balance here for many students. It is widely stated that the more failure a student encounters the more disenfranchised they become and so self-esteem is adversely affected.

In fact research indicates that if a student is kept back they are four times more likely to leave school before the completion of Year 12 (Bechtol, 1993). However, if we continually promote students through the system to protect their social and emotional needs, Barber's matrix tells us that a further problem then develops with their self-esteem. The more we ignore their inabilities and promote them throughout the year levels, the greater the gap in their knowledge will grow. This snowballing effect will see an ever-widening gap in knowledge become evident as students move through the middle years, resulting in more failure and lower self-esteem. The Victorian Department of Education and Training (2003) indicate further ramifications in recognising that educational achievement is a significant factor in determining life opportunities.

It appears that automatic promotion is a key to setting students up for failure and demoralisation. Barber (1991) comments on this problem noting that the range in ability and knowledge among students is stark and that it widens, rather than narrows, through the middle years. Yet, in the face of this widening gap in knowledge, students tend to be automatically promoted through the year levels. This causes an obvious lack of success, and in a curriculum of high expectations Barber suggests that the only result can be demoralization for the student. Thompson (1994) urges that this ever-widening knowledge gap be addressed, and that somehow we need to provide intrinsic motivators to re-engage students in their learning. Piper (1992) found that allowing students to reach their full potential through catering for individual needs inside a curriculum that could be adapted to the interests and abilities of the students, whilst encouraging them to improve and succeed, were seen as the key to more effective schooling. Ainley (1992) also comments that schooling must be both challenging and relevant if learning outcomes are to be both substantial and meaningful for students.

McInerney (2000) reveals that negative thoughts from students are detrimental to motivation and students get trapped in a syndrome in which feelings of confidence, interest and excitement in learning are neglected. These feelings are related to instances where the student finds an activity “boring” or where the student can not see the connection between reality and real life. Their self-concept also plays a role in how they assess the activity, for example if it is “too hard” or if they see themselves as lacking ability then again the interest in learning is affected. This implies that educators need to ensure that students can engage in activities that they do not find boring and again the idea of relevance comes to the fore. Subject matter needs to hold an interest and a connection to real life for the students being exposed to it. Students also need to be able to access activities at a level that is appropriate for them so they can recognise their chances of succeeding when they attempt a task. This last point is of much interest in light of traditional school structures. Earlier research indicated that students need to feel sufficiently challenged, and yet the task can not get too difficult or they lose interest in the learning process. This surely applies across the whole curriculum. Yet how can students in the traditional educational system, where they are grouped according only to age, not interests or abilities, experience the confidence, interest and excitement in their learning to which McInerney refers? If we were able to provide a structure where students were challenged at an appropriate level and found the subject matter interesting and relevant, would students study better? Would teachers find a difference in the motivation and engagement of the students in their classrooms? Would students be in a position where success was an achievable outcome?

Another factor, also identified on Barrett’s student needs list and linked to the ability of a student to experience success in the classroom, is how “safe” a student feels in the classroom. It is important to build an environment where the student feels able to ask questions and experience a trial and error approach to learning where it is suitable. If

students do not feel safe to make mistakes they are going to be less likely to try new things where they are unsure about the results of their attempts. McGaw (1992) supports this notion explaining that “if students are able to fail without ridicule then they are more likely to take risks in trying to excel” (p. 117).

How then is such an environment created? Relationships between students and staff would be a critical factor in establishing this safe haven for students to take risks and explore learning. McGaw (1992) tells us that “education is such an intensely interpersonal activity that personal relationships are central to the quality of teaching and learning” (p. 127). Building good relationships that are positive and affirming was also highlighted by Barrett (1999) as an essential feature in addressing student needs. In the classroom this can be achieved in a number of ways. What about outside the classroom? Would involving students in decision-making about their learning programs have the natural spin-off of building good relationships? It seems reasonable to think that if students were given the opportunity to discuss, with a real chance of accessing curricula that interests them, then there would have to be a strengthening of relationship between the student and those having the discussion with that student. In terms of curriculum, teachers and to a lesser extent parents, who usually assume roles of telling students what to do, would be in the reverse position of asking the student what they want and trying to make it achievable for them. McGaw (1992) insists that if the communication between parents, students and staff are open and based on mutual respect then students will feel they can approach teachers for matters both educational and personal. I believe that the present study will reveal whether using student directed learning programs, where students make choices about their individual learning programs, offers such an opportunity, and would thus strengthen relationships between staff, students and parents.

Students' needs are critical in the consideration of how to motivate and engage them in the classroom. Issues of relevance, ability, self-esteem and social and emotional development all appear to contribute to the factors that influence how we create a learning environment. More significantly, how can we incorporate these factors when traditional approaches to education rely on structures that group students according to age, that sees a common and core curriculum for all students, and relies on individual teachers to cater for multiple intelligences and learning styles in their individual classrooms. Cumming (1998) indicates that there is a growing recognition that in order to effectively meet the intellectual, physical and emotional needs of young people, then greater flexibility in terms of both structure and approach in the middle years is required.

Middle School Reform

The middle years of schooling are under scrutiny in a number of countries around the world (Kiddey, 2001), although according to Brennan and Sachs (1998) this has only become a focus in terms of curriculum and research quite recently. The appraisal taking place stems from the recognition that schools have diversified in their role and function over the years in response to an expanded range of demands and expectations (*The Middle Years of Schooling: A Discussion Paper*, 1992). One aspect of this appraisal is encouraging many school leaders and teachers to question whether traditional school structures are assisting or hindering progress towards higher standards of achievement (Kiddey, 2001). Middle schooling should be founded on a commitment to advance the learning of all students and to achieve outcomes which are meaningful and beneficial to each individual student (Cumming, 1998). The Melbourne Catholic Education Office released a statement in 2000 stating that many of our schools and classrooms reflect a factory model of learning and teaching, a point re-iterated by Fisher (2002) in his statement

that schools are part factory, part asylum and part prison. These analogies hardly seem fitting environments for effective and engaging teaching and learning that respects difference and diversity – a key element in addressing the needs of all students. How can we engage students if they feel imprisoned by their classrooms? How are we enhancing individual strengths that can shape the future of our communities if we churn students through the system in a factory like process? One certainly conjures mental images of the production line belt moving all the students through the doors from P-10 with the factory operator teachers adding their dose of “education” as the students glide by. Kiddey (2001) certainly advocates that students are taught material which for many of them is irrelevant. Perhaps this irrelevancy explains why it is now so well recognised that middle years students are disengaging from their learning, classroom activities, teachers and their schools (Melbourne CEO, 2002).

If it is so well recognised that students are disengaging from their schooling what can we do to rectify the problem? What lies at the heart of the reason for this disengagement? Some have argued that educators need to do more to address relevancy and students needs. Others are arguing that in considering student needs, the actual structure of schooling must first be addressed. Kiddey (2001), Gude (1999), Fisher (2002) and Catholic Education Melbourne (2002) appear to be challenging this structure of schooling to be at the heart of the problem. This is re-iterated by Margaret Cook (2001) quoting Professor David Hargreaves, head of Britain’s Qualifications and Curriculum Authority speaking to the national conference of the Australian Curriculum Corporation: “we must prepare young people for lifelong education and make sure they remain engaged with formal education for longer than before and the way schools are structured will change as part of achieving this”.

The middle school concept is not a new one. Its advocates believe that schools exist to cater for the needs of students – and students should not be required to adapt their learning styles to accommodate outmoded school structures (Lawton, 1999). Many approaches to addressing middle years' issues, and the call for middle school reform, have been adopted and trialled. There have been both the minimally successful ad-hoc approaches to total overhauls of the traditional system which have demonstrated greater success - perhaps because of the huge potential for embracing the rhetoric without actually changing every-day practice - recognised by teachers involved in the National Middle Schooling Project. Larry Scott (1997), Senior Superintendent with the Tasmanian Department of Education points out that many schools try to incrementally incorporate the essential elements of reform within the existing time-table structure but that this is an impossible task. He urges that time and space in schools be used more flexibly, arguing that the "traditional" structure "thwarts real reform". This is also recognised by the National Middle School Project participants: "Schools engaged in reform need adequate time, personnel and a flexible infra-structure" (Cumming, 1998, p. 7). Scott (1997) insists that a democratic learning environment that will help re-engage students requires holistic change in curriculum and structure. It can not be changed in a piecemeal fashion. Thompson supports this notion stating that demanding more from our schools is not enough – the system itself must be fundamentally changed (Thompson, 1994). Brennan and Sachs (1998) report that there are many pressures that keeps a school operating within existing patterns. Cumming (1998) indicates that this is closely linked to the piecemeal and fragmented approach many schools use when undertaking reform initiatives where discrete changes to the curriculum, pedagogy, organisation or educational environment are not conducive to sustained improvement. He notes that work in any one of these areas automatically requires work in the other areas. In other words, we must approach reform

in a holistic fashion. One can not merely look at curriculum reform without considering organisational and pedagogical review also. Brennan and Sachs (1998) reporting on an integrated approach to middle years curriculum also maintain that work in one of these areas separate to the others does not result in useful outcomes.

The impetus for middle school reform is founded on increasing understanding of today's youth where the needs and concerns of young adolescents receive greater attention and are linked to appropriate reform strategies (Lawton, 1999). These strategies need to ensure that students learn and develop positively which, as Barrett (1999) reveals in a report based in the findings of the National Middle Schooling Project, they are not doing in the current educational setting. Cormack, Johnson, Peters and Williams (1998) report that the structures that are essential in supporting success in middle schooling include timetabling that allows for extended and flexible use of time, leadership in middle schooling and parental involvement.

Research conducted by the Education Department of South Australia into the education of young adolescents in 1992 found that consideration of student needs is incomplete without a parallel consideration of the organizing structures. This is especially true in the secondary sector where meeting individual needs means grappling with the complexity of timetabling (*Junior Secondary Review: The education of young adolescents*, 1992). Furthermore, each child is unique hence schools must be organized to provide for the individual differences of their students (Bechtol, 1993). Formally recognizing and catering for the unique needs of adolescent students means providing appropriate school structures and curriculum (Lawton, 1999). The South Australian research further found that it was the system that had a role in achieving this with the design of better organizing structures given as an example (*Junior Secondary Review: The education of Young Adolescents*, 1992).

Participants in the South Australian study identified the significant and recurring problems reflecting lack of engagement were:

- Acting out
- Unwillingness to participate observe through withdrawal, absenteeism and refusal to work
- Active harassment of others

When asked to suggest methods for combating these problems, the key responses indicated that we can not rely on the traditional educational structure which operates on the premise of making students fit the curriculum we devise as “good for them”. Students do not fit the curriculum, so we need to tailor the curriculum to fit them. We need to provide more opportunity for student input. We need to ask students what *they* want to know, not assume we know what they need. We need to provide opportunities for students to be involved in decision making and daily function, if they are involved, their aggression and apathy will be alleviated. We need to encourage a sense of ownership and responsibility for happenings in the school (*Junior Secondary Review: The education of young adolescents*, 1992). Cumming (1998) reports on the different strategies for reform in the National Middle Schooling Project as having one commonality: an attempt to place greater responsibility for learning and self-improvement in the hands of the student. In all of the projects adopted by participants in the National Middle Schooling Project the one commonality in considering curriculum was a focus on listening to students so that they were centrally involved in articulating their individual curriculum and its connection to their current and future lives.

These are the ideas and findings of educators involved in various research and trials, but would providing these changes and opportunities for a more student-centred curriculum structure really achieve the types of changes we are looking for in our students?

The present study examines the vertical curriculum structure at a Catholic secondary school trying to address these issues: a change in the structure that attempts to give students more choice, involvement and decision making and aims to reveal whether or not students do respond to such structure in the way we intend. That is, do students appear to be more engaged and motivated through having choices and the opportunity to be involved in the decision making about their learning? Does this appear to give them a sense of ownership and responsibility? Their opportunity to have choice is addressed through a more flexible timetabling structure. Ownership and responsibility of learning through student input and decision-making in their learning programs by allowing them to select units of study that appeal to their interests is one way that re-engagement might be achieved. What the present study aims to reveal is whether doing this does actually appear to motivate and re-engage the students as many researchers suggest it should.

If there is such a base of research suggesting that reform is crucial to the re-engagement of students (and thus the successful future of society as posed by Gude (1999)), then why do we not see greater policy development at the government level? Perhaps this can be linked to Goodson's (1994) suggestion that curriculum is defined, redefined and negotiated at a number of levels and in a number of arenas. In this era it becomes too difficult to form policy that can affect school structure on a wide-spread basis. When the traditional structure was conceived at the inception of compulsory education there was no competing or established structure already in place. Today with the autonomy granted schools and Goodson's insight to the number of different levels and arenas in which policy is formed we rely on individual schools to embrace the challenge and call to reform. There would certainly need to be more empirical evidence of the success of such reform before policy was addressed at the government level. Piper (1992) encourages a view of educational decision making that is more interactive, more

collaborative and more inclusive of the diverse interests which are represented in the education arena. He particularly encourages decision making to be more inclusive of the needs of students who he recognises as the ultimate clients of educational reform, but who are also the most often marginalised in the decision making process.

Vertical Curriculum

Barrett (1999) acknowledges that there is no one solution to the problems emerging in the middle years: there is no one model of reform which will suit all situations. After participation in the National Middle Years of Schooling Conference and extensive research in other vertically structured schools, the College in the present study made the decision to implement a Vertical Curriculum as their model of reform for students in and beyond the middle years. Vertically structuring the curriculum essentially removes class grouping based on age. Glennen (1998) tells us that vertical curriculum offers a systematic change that cuts through the artificial barriers of age and year levels and offers students a choice and range of courses which cater to their individual level. This is achieved through a unitized timetable, and sees vertically structured curriculum offering the sort of systematic reform and opportunities to re-engage students that were discussed in the above literature.

The literature discussed so far, suggests that students need to work at appropriate levels in order to be motivated and to experience the sort of success that will give them self-esteem and confidence. The idea of this has been present in many school structures for a number of years in the form of programs for gifted students, recovery reading, and other remedial groupings. Farmer (1994) supports this notion by indicating that there have been many programs over the years designed to meet the needs of students struggling to master the basics through remedial work. More recently efforts have been made in most schools to challenge the gifted and talented students through accelerated programs or

extension work. Piper (1992) reports on research where parents and educators indicate a need to provide programs for such groups. However, Farmer (1994) maintains that an approach that offers common curricula with the extreme ends catered for reinforces the problem for 80% of students who belong in the mainstream who miss out on individualized consideration of their learning needs. He asks the question: “Does the curriculum need to be the same for all students?”

Hargreaves (1994) informs us that “in many parts of the world, centralised written curricula are being erected and imposed in ways that are re-inventing traditional subjects and re-asserting their value to the detriment of students who would benefit from educational experiences of a more relevant and flexible nature” (p. 4). Goodson (1994) reminds us that in our own schooling we loved some subjects and hated others and while he acknowledges that sometimes it was the individual teacher, or the time, or some other factor contributing to these feelings, often it was the “form or context of the curriculum itself” (p. 16) that influenced our desire and willingness to learn. Coil (2003) recognises the frustration felt by many educators with the traditional “one size fits all” approach to teaching: “At one point in time teaching to the middle may have been a workable strategy, but the big middle has become the little middle in most classrooms” (Coil, 2003, p. 89).

In line with Farmer’s query, Piper (1992) in his study of what makes schools effective raises what he describes as a crucial question: is there an “identifiable body of learning that is required by all students? (p. 51)”. In answering this we need to consider the purpose of education. The Victorian Government department of Education and Training (2003) made the statement that “the central goals of education focus on the importance of improving the standards of literacy and numeracy and retaining young people until Year 12 or its equivalent” (p3). It is difficult to glean the pedagogical motivation in such a political statement, but nonetheless, the central goals speak nothing of

common and core outcomes for all students. The National Middle Schooling Project funded by the same government department states its goals to be working towards “responding more effectively to the specific developmental needs of young adolescents” (Cumming, 1998, p. 5). It would seem reasonable to think that different individuals would have different specific needs, so again a common/core approach would be contradictory. Other government initiatives such as the Victorian Certificate of Applied Learning (VCAL) and Vocational Education Programs such as Vocational Education and Training (VET) in Schools indicate that there is strong recognition in the post-compulsory years that alternative pathways are necessary to meet the diverse needs and interests of individual students in learning programs. The need for this differentiation does not begin when students hit the post-compulsory years. Students are always individual, they always have different needs and it is time we recognise this fact through appropriate curriculum provision in the compulsory years of education as well as through the post-compulsory years. Piper’s own study certainly revealed from parents and educators from a quarter of schools around Australia (excluding Queensland), that the purpose of education is preparation for “effective participation in the social, cultural, economic and political life of the community” (Piper, 1994, p. 51). Goodlad (1984) indicates that an effective school is one that manipulates curriculum provision to maximise access for all of its students. Levine and Lezotte (1990) also highlight the need to be willing to modify and adapt the curriculum to the particular needs of students and suggest that it is a well out dated practice to implement mandated syllabus, official guidelines and packaged materials without some consideration of the individual needs of the students accessing them. In fact, as Coil (2003) points out, learning is a constructive process where new learning is achieved when the learner can make connections with previous knowledge or experience. Given we all

have different backgrounds and individual experiences, our learning needs too will be individual.

Past studies certainly suggest that a limited choice of studies and a strong academic focus enhance both student achievement and retention rates (Fullan, 1991; Lawton & Leithwood, 1988; Bryk & Thum, 1989) yet in the same research period other studies revealed it is through a broad range of choice and innovative programs geared to the needs and interests of particular groups of students that increases both retention and achievement (Ainley, Batten & Miller, 1989; Wehlage & Rutter, 1986; Batten, 1989). The Australian Effective Schools Project reported by McGaw, Piper, Banks & Evans (1992) revealed findings of the study suggesting as little as 1.1% of respondents referring to a need to promote “the basics” (3Rs) and up to 50% of the comments made about the curriculum stated adamantly that “diversity was essential”, although again programs for particular groups (gifted/less able/etc) were a focus for respondents. One quarter of respondents “nominated core curriculum as an essential feature” (p. 52). McGaw et al.’s research project appears to suggest that the majority of parents and educators can see the benefit of differentiating the curriculum for students’ needs to be addressed but there seems to remain a lack of imagination in how this can be achieved for all students and not just the gifted or remedial groups. After all, as Chitty (1988) challenges us “there is not one curriculum for every child, but every child must be a separate problem for the teacher” (p. 321).

Piper (1992) tells us that the supporters of a core curriculum argue that through a common curriculum experience students will achieve equity of access to essential learning, and that it is both in the students’ and the community’s interests that all students experience this common education. On the other side of the coin, supporters of curriculum diversity argue that students have individual needs and so equity comes through the access of learning appropriate to their individual differences. Of course the middle ground which

is often in effect in the later years of compulsory secondary schooling is the common or core curriculum, mostly academic in nature, taken by all students that is supplemented with an elective program that attempts to cater for some of the diversity. The range of electives is commonly limited to studies in the Arts and Technology areas of the curriculum.

The common versus differentiated curriculum argument is by far the most prevalent in most recent research, and was certainly the most prominent issue emerging from the effective schools project. Piper draws the analogy between this and the issue of devolved or centralised curriculum decision-making and notes that the arguments advanced from proponents of both sides are similar for the two issues. It is my observation that not one study makes a link between differentiation of the curriculum with an overhaul to the structure in which curriculum is delivered. The basic assumption is that curriculum has to be delivered in the same grade/year level structure that it always has remains intact, a paradox highlighted by Goodson (1994) with his observation that it is treated as a “given”.

Coil (2003) recognises that in order to differentiate the curriculum flexible grouping is essential. She also suggests that all teachers want to accommodate the diverse, individual differences in the learners in their charge but grapple with ways to do this. There are a number of strategies, some of which have already been discussed, based on remedial and gifted learning, others on what Coil describes as “cluster” grouping of students within each classroom according the particular activity and the students’ learning styles/abilities/interests/etc. Again the success of such strategies seems overly reliant on the individual teacher, and their willingness and ability to provide such opportunities. What is realised by many researchers is the need for this recognition of differences amongst our students to be addressed on a school level, not just a classroom level. Whole-school structures that enable differentiation for individual students need to be provided.

With retention and preparation for active community life in a social, economical and political sense being identified as key outcomes of Australian education we further explore question of differentiated versus core curriculum. Goodson & Dowbiggen, (1994) reveal that social efficiency reformers maintain that “traditional high-school curriculum is not suited to the interests, aptitudes and occupational needs of most students” (p. 63). This seems a reasonable assessment given we all move into quite diverse areas of occupation upon entering the workforce. If this is the case, why not spend some of our high-school life also diversifying in our interest and ability areas? Findings in the effective schools study indicate that over half of the comments offered regarding curriculum advocated that diversity in learning programs was essential, while around one quarter opted for the other extreme arguing for common and core curriculum for all students. The final quarter represent the previously discussed “middle ground”, arguing for some flexibility which Piper et al. (1992) interpreted to mean the provision of some sort of common framework that allowed for the provision of particular students or student groups within it.

I question that if we do enforce a common and core curriculum on all students are we showing respect for their different learning needs, their different learning styles, or even their differing interests and abilities? The idea of a “relevant” curriculum that is interesting for students was seen as a prime requirement for meeting student needs in the research project conducted in South Australian schools in 1992 (*Junior Secondary Review: The education of young adolescents*, 1992). When studying motivation, McInerney (2000) too notices that there is a great variation from individual to individual on level of motivation for particular tasks and this variation tends to reflect interests, values, ability and effort. Lawton (1999) suggests that it is only natural that student consultation and the inclusion of student decision making is embraced to promote the learners interest and hence their level of effort in a particular task. This recurrent theme was also discussed in

the arguments presented earlier towards reforming school structure. Lawton (1999) states that through this level of involvement, students are empowered and hence we can maximize student ownership, pride and responsibility in their school as well as serving to ensure the needs and interests which students themselves consider most important, are considered. Barber (1999) also supports this notion with his acknowledgement that it is important that students feel included and involved in their learning.

A notable feature of the findings in the Effective Schools Project as reported by Banks (1999) was the “call to celebrate all types of student achievement and not simply the academic” (p. 33). Curriculum has been in the history of education primarily academic in its focus and as Piper (1992) reports advocates of this approach argue that this provides intellectual substance and rigour. Hargreaves (1994) postulates that subjects are a source of status and identity for teachers. If this is the case then breaking down the structures of curriculum delivery in its traditional sense and differentiating it according to individual students’ interests and abilities will likely pose a great threat to those using it to define their own status, or even as it is known to be done, the status of the school. Hargreaves (1994) maintains that “pursuance of increased status for many subjects is antithetical to the interests of the most needy students who are exposed to them” (p. 5). I would go further to say it is in fact antithetical to the needs of the majority of students who are exposed. The hierarchical nature of subjects tends to place academic study at the top of the scale, especially as Banks (1992) tells us, in terms of literacy and numeracy. So students studying successfully in these areas tend to get more feedback about their capability and intelligence than other students. Unfortunately it is also the academic subjects which tend to be used as the benchmarks for student achievement, and certainly remedial and gifted programs are traditionally aimed in the academic arena. We do not often hear of a student being recommended to “stay down” because their performance in the Arts is not up to

standard. Even more unfortunate for those who are staying down due to their academic limitations is that, in the traditional structure they are being “kept down” in all other areas of curriculum also: areas where they may have flair and excellence; a talent and ability that is not recognised or celebrated while they continue to flail with academia.

Kliebard (1986) also recognises the “saliency of traditional school subjects in the face of curriculum reform initiatives” and describes the school subject as the “impregnable fortress”(p. 16). Goodson (1994) indicates that many aspects of school work occur in arenas outside school subject work. He reveals that studies of school process have shown that the inception of integrated, pastoral and remedial work have all originated because students do not generally achieve in traditional subjects. Proponents of curriculum reform also argue that the traditional, academic approach is narrow, restrictive and irrelevant for both the needs of the majority of students who are exposed to it and to the demands of a changed and changing world (Piper, 1999; Hargreaves, 1994). A thought supported by Goodson and Dowbiggin (1994) who tell us that social efficiency reformers believe that “the traditional high-school curriculum with its heavy emphasis on classical and academic subjects is not suited to the interests, aptitudes and occupational needs of most students” (p. 63).

The “breadth or depth” issue is also tied to the argument of reform. Should students study a little bit of everything, thus having some knowledge in a wide range of areas, or are they and their community, better served by exploring fewer areas in more depth? This question becomes more of an issue as we see the already crowded curriculum being compounded by what Piper (1992) refers to as an “explosion of knowledge in a rapidly changing world” (p. 52). Schools are increasingly called upon to take responsibility for education of social issues and Piper lists just a few examples - driver, drug, health and environmental education. With such an explosion in content that “must be covered” how

can a common and core curriculum be explored in any depth? It certainly brings to mind the old adage that “a little bit of knowledge is a dangerous thing” adapted from Alexander Pope’s “a little learning is a dangerous thing” (Pope, 1711). Students can not be expected to interact effectively with their knowledge and make sound decisions (especially about important social issues) if they are only skimming the surface of such issues and their associated concepts if they are spending limited time engaged in learning about those concepts. The same argument could be put forward regarding other areas of the curriculum in order for students to gain coherence in what they are learning. Two thirds of the respondents in the effective schools research acknowledged curriculum coherence as an indicator of an effective school curriculum which can only be effectively achieved if a depth approach to curriculum provision is taken. Coherence could also be achieved if students could identify links between subjects they study. This could be achieved through integration of studies across the curriculum. This raises again the issue of subject status and Piper (1992) too recognises what he describes as the “traditional insularity and territoriality of school subjects” (p. 54) which is particularly problematic in secondary schools.

The defining factor of a vertical curriculum is its multi-aged class groupings. Hence it becomes important to consider how this simple yet powerful shift in the grouping of students supports the ideas of re-engaging students and catering for their individual needs. Bechtol (1993) reveals the irony in trying to cater for individual needs in a traditional horizontal grouping by recognizing the diversity in today’s classroom – where there seem to be many more students with problems that require special attention. Yet teaching is essentially for groups, not individuals. He also states that in most schools students are presumed to have relatively equal learning needs, abilities and responses. School is teacher-centred and curriculum group-paced (Bechtol, 1993), a premise that fits with the

factory mode of current school structures presented by Kiddey (2001) and Catholic Education Office Melbourne (2002). How can we possibly respond to individual needs in such a structure?

Ball, Terry & Jones (1995) urge schools to move away from “batch processing” based on chronological age, and acknowledge that learning needs are not tied to specific age ranges. Bechtol (1993) also recognizes that skills and knowledge are not factors of chronological age alone and to treat it so is unrealistic and unfair. To react to it as if it is the student and not the system that is wrong is even worse. (Bechtol, 1993). Lodish (1992) tells us that non-graded organizational systems recognize and plan for a wide range of pupil abilities, provides for differential rates of progress, and adjusts to individual emotional and social needs (Lodish, 1992). The Vertical Curriculum being evaluated in this study is such a non-graded system of curriculum organization, but is it providing for differential rates of progress, and allowing adjustments based on individual emotional and social needs? Bechtol also argues that programs that provide for individual students must have multi-age grouping as a feature (Bechtol, 1993). Multi-age grouping can camouflage that students are above or below the grade or age directed level (Bechtol, 1993) and hence the issues associated with self-esteem are avoided. The most commonly mentioned change promoted in South Australian research on the education of young people was greater flexibility of curriculum and structure where vertical grouping of students across age ranges were proposed by almost half of the respondents (*Junior Secondary Review: The education of young adolescents*, 1992). This, as Glennan (1998) recognises, provides an opportunity for students to have a sense of ownership over their educational pathways, and hence maintain motivation, enthusiasm and hunger to learn. This is supported by Eldridge and Anderson (1999) who report on a vertical curriculum operating in their New South Wales school.

It is the hope of this researcher that the evaluation of one Catholic secondary school's vertical organization of curriculum will reveal whether the change in system student groupings does in fact allow for different abilities across the learning areas; whether individual interests can be catered for and if these things can be achieved does it better engage and motivate students in their learning? Does it give them a sense of ownership and responsibility? Does it provide a system where by relationships with peers and adults are positive and affirming, where difference and diversity are respected? If all of these things are possible, then this study takes on great importance to all educators trying to break the mould of "part asylum, part factory and part prison" (Fisher, 2002) that schools have been operating in since the inception of compulsory education. The challenge for schools is how to design learning programs and school environments that cater to these needs and hence motivate students to learn.

CHAPTER 3

THEORETICAL AND METHODOLOGICAL FRAMEWORK OF THE PRESENT STUDY

“Hypotheses are nets; only the one who casts will catch”
(Novalis, 1798/1929, p. 424)

Theoretical Framework

The review of the vertical curriculum structure three years after its implementation in a Catholic secondary college, was intended to reveal perceptions in the school’s community regarding the new structure. In order to measure these perceptions, the focus of the research is specifically on the attitudes of the college’s community. The findings will be used by the college to improve practice and policy associated with the delivery of the vertical curriculum. The methodology employed in such an undertaking is clearly cross-sectional in nature. “In cross-sectional research, researchers observe at one point in time” (Neuman, 1994, p. 26). Wiersma (1991) describes cross-sectional designs as involving “the collection of data at one point in time from a random sample representing some given population at that time ... where an individual is measured only once” (p. 169). This study attempts to measure the attitudes of sample groups of parents, students and staff only once hence meeting the “one moment in time” criteria.

In 1997 a group of interested staff formed a strategic planning group and set their agenda to improve the delivery of the school’s curriculum. A focus was given to middle years, as research and professional development experiences suggested that it was in these years that a dip in the learning curve occurred. The implementation of the vertical curriculum in this school was tied to the response made to issues raised at the Middle Years Conference held in Melbourne, Victoria in 1997. Key issues were identified in

relation to meeting individual student needs. In particular, all students should have the opportunity to study at an appropriate level at which they can experience success, where they could “own their learning rates”. Also, students would be more likely to be engaged in their learning if they could study areas of interest. This would be impossible to achieve in the traditional horizontal curriculum structure where students are grouped by age with no real consideration to their ability in different areas of the curriculum or in their particular interests.

The school looked at its own vision and mission (Figure 3.1) in considering the action of structuring the curriculum in a vertical fashion. It was identified as being important that the school offered something to keep it ahead of other schools and not become a basic “down the road” school; to raise the educational profile of the school in the community. Thus “schooling with a purpose” became the adage for the implementation team.

The vertical curriculum appeared to provide an opportunity to better meet the vision of the school. In particular, by enabling students to design (with advice and direction from staff and parents) their individual learning programs, the school would better show that the uniqueness of each individual and their dignity and sense of self-worth is respected. This would be demonstrated in the school empowering students by giving them choice in their learning programs. It was also believed the process of discussing, advice-seeking, planning and selecting units provided a more holistic development of the students in the school’s care. Setting of minimum requirements was part of the program so that students could not opt out of any Key Learning Areas as the breadth of curriculum experience was also identified as part of achieving holistic education and comprehensive curriculum. The main aspect of achieving comprehensive curriculum was however, tied more to providing a range of opportunities so that individual students could select a

program that was suitable for their learning interests and needs. To achieve this for the approximate 1100 individual students meant that a large range of programs and units should be available. Comprehensive curriculum does not mean that every student has to experience every program available, but rather that a comprehensive range of possibilities exist so individual students can navigate through the curriculum in unique ways as suited to their needs and interests. The school felt that by offering a range of units that students could select according to their interests and abilities meant that not every child experienced the exact same curriculum, but rather that they selected a pathway that was most suited to their needs and interests in the given milieu. These measures seemed to then better provide a “safe, happy and challenging learning environment”.

A Christ centered learning community that:

- is focused on Gospel values and sacramental life of the Church
- respects the dignity, self-worth and uniqueness of each person
- fosters development of the whole person through a comprehensive curriculum
- respects and celebrates life in a spirit of joy, nurturing in students a sense of wonder
- promotes education as a lifelong process and empowers students to take an active role in Church and Society
- promotes a safe, happy and challenging learning environment
- educates for peace and justice and accepts a commitment to the disadvantaged
- encourages open communication and collaborative processes
- is concerned for the pastoral well-being of students, staff and their families

Figure 3.1 Vision and Mission Statement

The school has always had special needs programs and accepted a significant number of students on an integration program each year, with testing conducted to identify and consequently run a program for students who were classed to have “alternative learning styles”. In this capacity there was already a strong provision for students who might be considered to be disadvantaged in other educational settings. The vertical curriculum was seen very much as an extension to this syllabus, just achieved in a slightly different way. Now not only were the disadvantaged provided with special opportunities and programs to suit their needs, but all students would have an opportunity to design a program through their own choices rather than one common program that was imposed on them all. This linked with one of the major questions that sparked the original investigation into alternative curriculum: Were all students being catered for, or just some? This was the primary drive behind selecting a vertical curriculum as the approach to address all the relevant issues. A vertical structure appeared to offer an opportunity to cater for all students, not just the advanced or struggling students who were being catered for in other ways.

The school already had ability groupings in English and Mathematics courses based on literacy and numeracy testing conducted for each student beginning at the school. Year 10 students had the ability to access some Victorian Certificate of Education (VCE) studies in areas where they demonstrated such a flare. So it became quite significant that the vertical curriculum offered the school an extension of what they were already doing. This meant that a number of issues associated with the inertia linked to major change could be played down. It also gave the “mainstream” group of students an emphasis that was lacking in other curriculum structures. These appearances and beliefs arose from the research the planning group conducted in other vertically structured schools around country and metropolitan Victoria.

Results of the research in other schools indicated that vertical curriculum did provide better outcomes for students, and it did improve motivation and behaviour. Students were empowered by choice; they were treated as individuals, not groups. These were all primary outcomes for the action group in meeting their agenda of improved curriculum delivery for all students. Some of the unintended outcomes reported were also positive - enhancement of parent-teacher-student relationships; greater efficiency in staff and resources; breaking up of undesirable “cliques”; staff having a wider contact with students; and students not automatically promoted because they are a year older.

Issues were also identified - vertical curriculum is harder to timetable; there are issues with subject selection accuracy; there is less time to know students; it is expensive to implement; and there is pressure to make units and presentation attractive and relevant. The other significant issue was that *it was change*.

This information, largely anecdotal, was presented to the whole staff and a number of professional development days were set aside over a twelve month period where staff could explore the philosophy, and to later consider some implementation ideas presented by the strategic group. After an extensive period of consideration and professional development the school’s administration team endorsed the reform structure and the strategic group became the implementation team, with a target date of 2001.

The year 2000 was primarily spent providing time for individuals and teams to develop ideas for units and to write curriculum according to the Curriculum and Standards Framework (CSF). A Geelong school was adopted as a model on which to base the development of the program and visits for Key Learning Area (KLA) representatives were arranged so further ideas for implementation and unit delivery could be explored. To encompass student involvement in decision making, a range of units were developed within each KLA at a number of different CSF levels. Thus students were able to peruse

the range of units on offer and, in negotiation with their class teachers regarding their ability level, were able to select units of interest. This provided an opportunity for students to discuss with various staff what it was that interested them. For some it was an opportunity to discuss career aspirations and dreams. For the first time a large number of staff were listening on a significant level to what students wanted. This was where it was hoped improvement in staff-student relationships would occur. A bond would be established if staff were, in a real rather than contrived sense, considering the thoughts and opinions of their students. We also hoped that involving the parents through information evenings and workshops that parent-staff and even parent-student relationships would be enhanced.

The time for review came around quickly, and forms the basis of this research. The school wanted to measure the perceived level of success it had had in achieving the intended outcomes, mainly that of improving the motivation and engagement of students by offering choice and involving them in decision making and planning. This led to the question of how to measure the success or lack there-of of the program. Anecdotes from staff, students and parents all seemed to involve an assessment based on their personal experiences that the program was good and/or bad at achieving things that individuals had expected from the program. This led the administration of the school to consider the program in two ways. The first involved the philosophy behind the implementation of vertical curriculum. The philosophy as discussed previously was closely linked to the vision and mission of the school and the experiences of staff involved in professional development days regarding middle schooling. Did the community agree that the philosophies presented to them could actually be achieved through a vertical re-structuring of the curriculum? The second aspect of the study arose in considering that if the community believed that a vertical curriculum did in fact provide an appropriate structure

to achieve the philosophies and intended outcomes, did the actual practice of the school in the way the vertical curriculum was administered allow the outcomes to be achieved? To find the answers, both qualitative and quantitative methodologies were considered.

Methodological Framework

“The fundamental purpose of educational research is to inform and improve educational practice” (Dorman & Zajda, 2001, p. 13). Educational research can be conducted to solve a particular problem or simply to extend the body of knowledge. For either of these purposes the long term benefits of conducting educational research is to improve the quality of professional educators in the field and to enhance the decision making behind teaching practice and policy making (Wiersma, 1991). This is fundamentally the purpose behind the review. Borg (1987) acknowledges that the more relevant information the decision maker has, the more likely they are to make a sound decision. The school’s decisions were to be based not just on how the staff, a small but significant proportion of the school’s community perceived the results, but on student and parent’s perceptions also. The role of the review and in fact of any educational research is thus to provide reliable and valid information through collection and analysis of data regarding the structure. There are many forms of research that can provide this information, all of which fall somewhere on the qualitative-quantitative continuum. Often individual features of quantitative research have associated strengths and weaknesses. At other times the strengths of the quantitative or qualitative method form the weaknesses of the other; so it is difficult to discuss one without mention of its counterpart, and both need to be considered before a method can be selected.

Every beginning researcher learns at once that all research is divided into two parts – and these are qualitative and quantitative (Crotty, 1998). In this sense, qualitative research

and quantitative research are set against each other as polar opposites, however Crotty (1998) argues that “this divide is far from justified” (p. 15). Quantitative and qualitative research share all of the common elements of research design. Both methods “state a purpose, pose a problem or raise a question, define a research population, develop a time frame, collect and analyze data and present outcomes” (Glense & Peshkin, 1992, p. 5). They differ not in the epistemological or theoretical sense, but rather at the level of method (Crotty, 1998).

Herzog (1996) and Neuman (1994) define quantitative research as the collection or expression of data as numbers while qualitative data takes a descriptive form using “words, pictures or objects” (Neuman, 1994, p. 6).

The method of data collection is not all that distinguishes these two methodologies. The other significant contributor to their distinctiveness is the manner in which the researcher is involved in the data collection and the purpose of conducting the research. To discuss the latter of these, Wiersma (1991) states “Qualitative research is done for the purpose of understanding social phenomena, social being. Quantitative research is done to determine relationships, causes and effects” (p. 14). Or for a more comprehensive description of the quantitative research: “Quantitative research is focused on individual variables, is context free (looks to form generalizations) involves statistical analysis and sees the researcher in a detached role” (Wiersma, 1991, p. 15). This supports the role of the quantitative researcher as seen by Glense and Peshkin, (1992) which is to remain as objective as possible by distancing themselves from their research instrument, while the qualitative researcher is the research instrument, interacting on an in-depth level with participants. Wilson (2002) says that “in quantitative research the researcher is ideally an objective observer that neither participates in nor influences the data being studied”. This level of “detachment” or “involvement” effects the level of objectivity or subjectivity the

researcher brings to the data analysis and hence the extent to which the results of the research can be generalized.

Data analysis for the quantitative approach has two goals. One is to summarize or describe the scores for the sample units actually included in the study. The second is to generalise conclusions to the larger set of units represented by the sample, that is, the population.

(Herzog, 1996, p. 54).

Wiersma (1991) agrees, stating that “quantitative researchers look for context-free generalizations. ...they try to separate facts and values.” (p. 14). This is quite distinct from the qualitative approach which “emphasizes the importance of subjective experiences of individuals” (Burns, 1994, p. 3).

In applying these principles to the present study the school was faced with a dilemma. Gathering data regarding the attitudes of parents, staff and students based on their perceptions and experiences of the vertical curriculum, in essence means dealing with the subjective experiences of individuals that Burns (1994) associates with qualitative research. At the same time however, statistical analysis can take the data collected and examine the possibility and strength of relationships between responses to different aspects of the questionnaires, thus qualifying a quantitative approach. It was certainly the intention of the research conducted to provide some quantitative data that could be presented to staff, parents and students that would either confirm or contest the anecdotal information they had all been presented with in the implementation and planning phase of the vertical program.

Educational research traditionally follows the quantitative method and it is only since the 1960s that the more naturalistic and ideographic approach of qualitative research has emerged (Burns, 1994). This ideographic approach is defined by the subjective nature of individual cases, compared to the detached and more readily generalised nature of quantitative research, termed the nomothetic approach. This is characteristic of scientific

method, born of positivism. “Positivism offers assurance of unambiguous and accurate knowledge of the world” (Crotty, 1998, p. 18) and is closely associated with the behaviour of scientists.

Neuman (1994) states that “quantitative research relies primarily on assumptions from the positivist approach to science” (p. 96) but Crotty (1998) warns that a positivist piece of work is not defined by the use of quantitative methods, but rather the attribution of objectivity, validity and generalisability to quantitative findings. So it becomes evident that the key to defining quantitative research is in its ability to offer valid, general rules and relationships. This is certainly another feature of what is desired for the present study. Results collected and analysed need to remove the subjectivity of the leaders of the program, namely myself, who are essentially driving the reform based on their own pedagogical beliefs. The results need to reveal a broader view of the beliefs possessed by the community that are valid and generalisable to the whole school. Clearly however, the results of a cross-sectional study such as this will not be readily generalised to other school communities.

Burns (1994) states that to “find real and valid evidence, traditional educational research holds that only a systematic, quantitative approach to generating and testing ideas is adequate” (p. 4). This allows the intelligent and informed decision making that should characterise parent, school, and government ideas about education. Validity is of key importance in quantitative research and is associated with the “truth” of research findings (Neuman, 1994). It is internal: the extent to which research findings can be related to the variable of interest and external: the extent to which the results are generalisable to other situations (Dorman & Zajda, 2001). Reliability is an indicator of dependability (Neuman, 1994) – that the results of the study would be the same if the study were to be repeated. Burns (1994) tells us that the importance of this is that the objective; systematic

investigation with analysis of data allows us to discern what actually the case is. Decisions are not based on the haphazard, subject to errors in recall, bias associated with personal experience (Borg, 1987). This is one of the major strengths of the quantitative approach. If valid and reliable data is collected, then quantitative research will yield data that is projectable to the larger population (Fitzgerald, 2000). Consequently, quantitative analysis allows us to discover which phenomena are likely to be genuine reflections of the behaviour of a given variable, and which are merely chance occurrences (Wilson, 2002).

Validity and reliability in quantitative research is achieved through the control of variables to ensure that direct casual affect of one variable on another, can be attributed with accuracy and confidence (Burns, 1994) (thus the cause and effect nature of quantitative research). Realising this validity is tied inherently with the researcher developing their analysis and design skills (Black, 1999). Neuman (1994) explains it is the use of variables, hypotheses, statistical form of analysis and casual explanation that illustrate why it is essential for the researcher to understand the components of research. But as long as this understanding to form a valid and reliable design is present in the researcher, the research results will be precise and generalisable to the larger population represented by the sample and hence the strength and power of quantitative data.

Educational research literature records a fundamental shift over the last fifty years in evaluation methodologies from quantitative experimental approaches to a predominance of qualitative methods. Many current evaluations, including the present study, adopt a hybrid approach which combines qualitative and quantitative methods that support the shift towards evaluation of authentic learning experiences in their natural context (Harvey, Higgison & Dunne, 2000). Wilson (2002) says that “in quantitative research the researcher is ideally an objective observer that neither participates in nor influences the data being studied”. This level of “detachment” or “involvement” effects the level of objectivity or

subjectivity the researcher brings to the data analysis and hence the extent to which the results of the research can be generalized. However, qualitative research is a “strategy that adds rigor, breadth, complexity, richness, and depth to any inquiry” (Denzin & Lincon, 2000, p. 5). Essentially qualitative and quantitative approaches to evaluation complement each other with qualitative techniques being well suited to exploring, identifying and explaining and quantitative techniques to demonstrating, measuring and generalising (Oliver, 1997).

Considering this information and the primary aims of the review, the present study employs both a quantitative and qualitative methodology through the design of cross-sectional questionnaires. A quantitative approach to analysis is undertaken on what is essentially qualitative data in the form of attitudes of parents, students and staff. These attitudes are ascertained through responses made to attitudinal surveys which were selected as the best method in which to gauge how the community felt about the reform that had taken place. This approach was also selected to increase the avenues through which objectivity could be obtained and to give results that were readily generalisable to the wider population of the school. An attempt to include some qualitative data analysis is made by the inclusion of open-ended questions at the end of the survey in order to incorporate some of the strength that qualitative data can add to a study.

The data will be collected from the attitudinal responses of parents, students and staff on a five-point Likert scale to closed questions/statements about the vertical curriculum as it applies to the college. The students, staff and parents will each receive a separately designed questionnaire. This design was used to achieve precise and reliable responses to measure each key group in the college community and to compare their perceptions of the vertical structure. To offset some of the weakness associated with quantitative approach, open ended questions are also incorporated in a separate section on

each of the questionnaires in an attempt to draw out some of the reasons and feelings about the program thus adding depth and richness to the research findings. The nature of the open-ended responses is expected to be primarily negative feedback about the vertical curriculum. This is due to the structure of the question that asks in particular for explanations and reasons for incidence of disagreeing with any of the attitudinal survey questions. The motivation in doing this is linked to the secondary aim of the study: to identify areas in the vertical curriculum program that need improvement. It was felt that if participants outlined their reasons for disagreeing with statements that are phrased in a positive fashion, then it would give the college headway into why community members are unhappy with certain features and thus planning for improvement would be more effective.

Closed questions will be subjected to descriptive statistics. Responses to open questions will be coded and all data will be subjected to descriptive statistics. The use of statistical analysis on the results places the research design primarily in quantitative methodology and the methods are informed by post-positivistic theory. Positivism holds to strict rules and procedures where casual laws can be discovered, explained and documented (Sarantakos, 1993), whereas the post positivists argue that “reality can never be never be fully apprehended, only approximated” (Denzin & Lincon, 2000, p. 9), which is the case for the present study. Post-positivism relies on multiple methods to capture as much of reality as possible. Both positivistic and post-positivistic designs lend themselves to statistical analysis (Denzin & Lincon, 2000).

The proposed study being nomothetic in nature lends itself to the positivistic paradigm, but the data collection extends into open ended questions. The data collected attempts to collect as much information through open and closed questions about the attitudes of members of the community in an attempt to present as much of the reality about the vertical curriculum as perceived by the staff, students and parents as possible.

One of the main challenges will be to maintain an objective evaluation. Since I am personally connected to the curriculum structure, its running and its administration, it will be prudent for me to take steps to maintain as much objectivity as possible.

Credibility is of critical importance in the evaluation of any middle schooling initiative. It is vital that those with the responsibility for the conduct of middle school evaluations bring objectivity as well as expertise to the task. Vigilance is required in order to avoid potential conflict of interest or blurring of roles (eg. between that of evaluator and advocate). Evaluation needs to be rigorous, and conducted in the spirit of openness and trust.

(Cumming, 1998, p. 55)

This relates to both the interpretation of results when the data is collected, and in the nature of the actual questions that are configured and presented on the questionnaires. In conflict with this, Rusu-Todorean (2000) argues the flaws in even considering that objective stand-point is possible:

The researcher cannot be detached from the society he/she is observing because he/she is part of it. He/she cannot step out and take an objective look. This does not purport only to the individual values and choices of which the researcher may be aware. It refers to the fact that everything in such an enterprise, from the choice of the topic to the theory underpinning it and the methods employed is contextually determined. All our concepts are socially and historically constructed. Therefore, they are inherently embedded in a constructed system of values and meanings.

(Rusu-Todorean, 2000, p. 3)

However, this does not imply that researchers can not aspire to achieve objectivity and this is achieved as much as it is possible, through the design and methods employed. A number of steps are taken in the present study to maximise objectivity, as outlined below.

To assist in identifying the main features and issues associated with the program at the college, focus groups were established. Focus groups are so named because the groups are asked to focus on a particular point or topic and discuss freely and openly their

thoughts and opinions on that topic (Sarantakos, 1993). The aim of utilizing focus groups was to allow issues and features of the vertical curriculum to emerge without what could be bias from my input. Since evaluations of attitudes of parents, students and staff were sought, a number of focus groups were established within each of these key groups.

To establish focus groups to represent the views of the staff, different aspects of the program and school structure were considered. The vertical program had a number of pastoral aspirations, and the key pastoral group already existing in the school was the House Leaders group. Consequently, House Leaders were selected as a focus group. The Key Learning Areas (KLAs) were selected as focus groups as it was thought that this would provide issues specific to KLAs to be raised and then overlap between them could be used to gauge where significant issues regarding the structure might lie. This also meant both pastoral and curriculum perspectives would be considered. KLA groups had a Smart Moves feedback as an agenda item for their meetings. In addition to being able to contribute at a KLA level, where the focus would likely be on the specific subject area, the staff was also able to form small groups at a staff meeting to provide feedback. It was felt by the administration of the school that providing the staff with a number of opportunities to input and help shape the process was important for morale and for building confidence in the pending results. It also gave staff different foci in each of the discussion in which they participated, whether it be KLA specific, pastoral or generalised discussions.

One focus group was established for parents. The school newsletter advertised a meeting for parents interested in providing feedback about the Vertical Curriculum. This meeting was also advertised as forming part of the review and evaluation of the Smart Moves Program. The meeting was held after school one evening to provide an opportunity for working and non-working families to participate, thus aiming to have a representative cross-section of the parent community involved.

To represent the opinions of the students, two focus groups were established. One group comprised of the school student leaders through the Student Representative Council (SRC). The other focus group targeted students whom on a consistent basis, did not appear to engage in the opportunities to select their own learning programs that were afforded them. This was assessed according to records where the students in question failed to submit their unit selection forms on time, or at all, for two or three of the years since the program was introduced.

All students, parents and staff were advised of a cut-off date for making unit selections. It was carefully and deliberately advertised that there would not be a first come, first serve policy, as the school did not want students to be rushing a decision-making process that was meant to be a carefully considered process that included talking to parents, teachers and, where appropriate, careers representatives. However, there was a final due date set beyond which the school community was told that they risked not getting their first preferences if their selections were not submitted. These students were the first to miss out on units if classes were full, or for some other reason, we could not schedule enough classes to cater for all students who selected a particular unit. Thus if students consistently failed to submit their forms on time it was regarded as significant in the context of what the program was trying to achieve for students.

The selection of focus groups was presented to the school's administration team for comment and suggestion and it was agreed that this selection seemed to give all relevant groups the opportunity to contribute to the design of the questionnaires through their feedback in these groups. The discussions from each group were minuted and presented to a "focus team" to determine the common issues that should be presented on each of the three questionnaires. This team also individually and as a group judged other significant

issues that arose for the individual groups were that should be included on the relevant questionnaire.

The team used to compare the responses from each group were able to draw out the key issues that should be included on the first draft of the questionnaires. Foddy (1993) tells us that questionnaire respondents commonly misinterpret questions. In an attempt to address this issue, the questionnaires were pre-tested on a small sample of people and their feedback reviewed and incorporated by the “focus group team”. A final draft of each of the questionnaires was presented for approval to the school administration team. Using the feedback from the various groups and stages, the questionnaires were finalised and prepared for distribution.

The majority of the questions were designed on each questionnaire so as to allow for comparison between the three groups: parents, students and staff on similar issues. Part of the research aims to determine whether there are significant differences in how each of the main groups within the school’s community perceives different aspects of the vertical structure. If focus groups identify issues that are relevant only to one or other of the three target groups (parent, student and staff) then these questions were included at the end of the questionnaire for the relevant group.

Upon return of the completed questionnaires, descriptive statistics was applied to describe the data. Statistical analysis allows very large amounts of information to be gathered and presented in understandable forms that can be used to enhance practice (James, 2000; Burns, 1994). James also states that using statistics to test research findings helps one’s assurance of the reliability of those findings. There is a large variety of statistical software packages (Wiersma, 1991) which are widely available and which work through what can be complex algorithms that look for correlations between variables, and present the summary statistics of the data. Using such packages, Wiersma (1991) tells us

that “computational accuracy is pretty well assured” (p. 306) which increases reliability in the findings.

Research Questions and Hypotheses

In the use of statistics, hypotheses are tested. Hypotheses were developed around the research questions as follows.

Research Question 1:

Are attitudes towards the vertical curriculum structure related to the gender, the age, the year level or the number of years in teaching or the attendance at information evenings by the parents, students or staff?

Hypothesis 1A:

Responses to questionnaires will be equivalent across the demographics: gender, age, year level, year began, years of teaching experience and attendance at information evenings.

Hypothesis 1B:

Responses to questionnaires will be equivalent across parent, student and staff groups.

Research Question 2:

Is students’ choice and decision-making about their learning programs related to motivation and engagement in their learning?

Hypothesis 2:

There is no relationship between allowing students choice and decision-making about their learning programs, and their motivation and engagement in their learning.

Research Question 3:

Is there a relationship between allowing students’ choice and decision making about their learning programs, and their sense of ownership of their learning program?

Hypothesis 3:

Parents, students and staff feel there is no association between allowing students choice and decision making in their learning programs and their sense of ownership of their learning.

Research Question 4:

Are students able to access units of study at the appropriate level for them, across all key learning areas?

Hypothesis 4:

Parents, students and staff believe that offering units at specific ability levels enable students to access units of study at a level that is appropriate for them.

Research Question 5:

Are life skills such as long term planning and responsibility promoted by expecting students to plan a pathway through the non-compulsory years?

Hypothesis 5:

Parents, students and staff feel there is no association between expecting students to plan a learning pathway through the non-compulsory years and the promotion of responsibility and long-term planning skills.

Research Question 6:

Are relationships between staff and students, staff and parents and parents and students enhanced through students experiencing a greater sense of valuing because they are given the opportunity to discuss and plan for their individual interests with staff and parents?

Hypothesis 6:

Parents, students and staff feel that there is no association between students feeling valued and the discussions that occur between them in the unit selection process.

Research Question 7:

Are there statistically significant differences in the level of agreement between parents, students and staff that:

- a) there is an appropriate level of choice available?
- b) unit selections are made according to interest and ability?
- c) the appropriate level of information and advice is available regarding selection of units?
- d) that a vertical structure is a better way of delivering the curriculum?

Hypothesis 7A:

There is no statistically significant difference between parents, students and staff beliefs that there is an appropriate level of choice available in the vertical curriculum program.

Hypothesis 7B:

There is no statistically significant difference between parents, students and staff beliefs that students base their unit selections on what their friends are doing.

Hypothesis 7C:

There is no statistically significant difference between parents, students and staff beliefs that there is an appropriate level of advice and information that is available during the unit selection process.

Hypothesis 7D:

There is no statistically significant difference between parents, students and staff beliefs that the vertical curriculum is a better way of structuring the curriculum.

At the end of each questionnaire, parents, students and staff were invited to offer any comments they would like to make and invited in particular to do so if they had disagreed to any of the statements responded to in each of the philosophy and delivery sections of the questionnaire. The comments were coded into main categories according to the general theme being communicated in any comments offered. Triangulation, a cross-validation technique (Wiersma, 1991) was then applied to ensure reliability of the coding by asking two other members of the initial team looking at the questionnaires to also code comments according to the initial categories selected. The triangulation process involves the “comparison of information to determine whether or not there is corroboration” (Wiersma, 1991, p. 232). The technique increases the reliability of the comment coding and thus the likelihood that the results of the research could be replicated if someone else were to examine the same data, or collected similar data. The coded comments resulting from the triangulation process were then subject to cross tabulation and thus frequencies of response types examined for descriptive analysis.

CHAPTER 4

THE PRESENT STUDY

“The two most important features of a well-designed survey are the use of probability sampling and the collection of standardized information. A well-drawn sample allows you to generalize results to the complete population and estimate error in the data. Writing thoughtful, well-conceived questions and administering them in a standardized manner ensures valid and reliable data that allow for analysis and generalization.”
(Rodeghier, 1996, p. 1).

The present study looks to examine the attitudes of three key groups in the school’s community: parents, staff and students. Participants were selected from the parent, student and staff bodies of the school’s community providing sound probability sampling techniques. Separate questionnaires were developed for each of the parent, student and staff sample groups. The design of these questionnaires was based on discussions held in focus groups set up for this purpose as described in Chapter 3. In order to answer the research questions the questionnaires were divided into four sections. Following is an outline of the focus groups, the questionnaires, and a description of the participants in the study.

Participants

The participants of the study were selected in consultation with the administration team of the college. It was decided that all students in years 8 thru 11 would be included in the student sample. These students were given consent forms for parent/guardians to complete prior to the distribution of questionnaires. All teaching staff were included in the staff sample along with any other staff considered to have a significant exposure to classes. These staff, as determined by the administration team of the college included teacher aides (integration aides), librarians, and any other technicians or support staff with classroom

exposure. Office and maintenance staff were not included in the sample. A random sample of half of the parents was considered adequate. The parents included in the population were those of year 8 thru 11 students only as this corresponded with the student population to be used in the study.

A total of 1107 questionnaires were distributed and 801 (72%) of these were returned: of 300 parent questionnaires 110 (37%) were returned, of 99 staff questionnaires 73 (74%) were returned and 618 (87%) student questionnaires were returned from the 708 distributed.

Focus Groups

Rodeghier (1996) indicates that the definition of survey objectives is normally a collaborative project involving many people in an organization. In this situation the school's administration team were the primary steerers of the survey outcomes. However, as Rodeghier recognises, while this allows supplementation and development of key of ideas, it can also be overwhelming and thus difficult to decide what will and will not be included in the survey. In this study a discussion of primary objectives of the survey was set out by the committee and refined and re-presented by the researcher. With the administration's approval, Focus Groups were established for various representative groups within the school and broad questions posed in relation to the primary outcomes.

The Focus Groups established provided initial data on the issues and themes occurring for each of the key groups: parent, staff and students, to be included in the research. The records from the discussions in these focus groups were used to ensure that these key issues and themes were included on the questionnaires so that more comprehensive data could be collected. A secondary purpose of using focus groups was to

reduce the bias I might otherwise have introduced to the questionnaires due to my close association as the co-ordinator of the vertical curriculum in the school.

In an effort to be representative, a number of different focus groups were formed. One focus group consisted of volunteer parents to obtain their views and opinions. An evening meeting was scheduled and advertised on the school newsletter in the weeks preceding the meeting. This allowed all parents the opportunity to be involved, although did not guarantee a truly representative sample of the parent body. A number of staff groups were formed to represent their different roles in the school including the administration team, Key Learning Area Co-ordinators, Pastoral Care Leaders, and a group of staff who have a full teaching load (no other position of leadership in the school).

A number of different groups were also formed at the student level to represent different groups within the student body. These included the student representative council (SRC); a group of students who have been in a number of mixed age groups (selected at random and then checked against class rolls to ensure the multi-aging experience); those students who have repeatedly not returned their unit selection forms were also targeted.

Each of the focus groups was told that they were participating in part of the review process. They were not informed that their discussion would form the basis of the questionnaires. This was a deliberate action to ensure that their discussion was open and spontaneous and not geared towards another end. It is possible that their discussion may otherwise have incidentally been affected by the knowledge of how it was going to be used, otherwise known as the Hawthorne effect (Neuman, 1994). Focus group participants were then invited to share any comments/concerns or issues they had with the philosophy and/or the delivery of the vertical curriculum. The discussions were open forum and not directed in any other way from the initial instructions. All points raised were minuted and a small team of people looked for common issues or themes within and between each of

the parent, staff and student focus groups. Minutes from each of these focus groups can be found in Appendix 3.

The feedback from each focus group was presented to a committee of three members for the cross-validation process of triangulation (Wiersma, 1991). This allowed a collaborative and corroborative approach to identify the key and recurring issues identified by the different focus groups. Issues identified in this process were used as the basis for forming questions on the surveys. The survey questions were developed by the researcher and presented back to this committee for pre-testing. Pre-testing is an important element of survey research (Rodeghier, (1996); Wiersma, (1991); Burns, (1994)). Rodeghier (1996) tells us that the goal of the pre-test phase is to uncover problems with the questionnaire and that it should be an on-going process throughout the development of the questionnaire. In line with all of the literature supporting this idea, the committee used for triangulation of focus group results were the first used in the pre-test phase. Later other members of the target population were also incorporated, including staff, students and parents. Overall approximately 20 individuals were involved in the pre-test.

Questionnaires

Separate questionnaires were developed for each of the parent, student and staff groups included in the research samples. The first section of each questionnaire collected background information about the participants. All participants were asked to indicate their gender. The other background information was specific to the respondent as a parent, student or staff member. In particular, Parents were asked to indicate their age by selecting an age range. Parents were also asked to indicate the year level their student(s) began at the college and how often they attended information sessions held for unit selections. Staff were also asked to indicate their age bracket as well as the number of

years of experience in teaching. Students were asked to provide their current year level, the year level at which they began at the school and how often they attended unit selection information sessions. Table 4.1 displays each of the variables in the background information along with a brief description of their measurements.

Table 4.1

Categories in Background Information and a Brief Description of their Measurement

Variable Name	Measurement
Type of Questionnaire	1 = Parent 2 = Student 3 = Teacher
Gender	1 = Female 2 = Male 3 = Missing
Age Bracket	1 = 20-30 2 = 31-40 3 = 41-50 4 = over 50 0 = Missing
Year Level student(s) began	7 = Year 7 8 = Year 8 9 = Year 9 10 = Year 10 11 = Year 11 0 = Missing
Attendance at Information Sessions	1 = Not Applicable 2 = Always 3 = Never 4 = Sometimes 5 = Missing

The second section of each questionnaire was related to the philosophies behind the introduction of the vertical curriculum in the school. An introductory note outlined what

the school identified as the main philosophies behind the program and was used to serve as a reminder before participants responded to the associated questions. A series of statements relating to the school's philosophy behind the vertical curriculum were then phrased and participants were instructed to respond on the attitudinal scale provided corresponding to their level of agreement with the particular statement. The number of questions in this section varied slightly between each type of questionnaire with 14 questions for the parent questionnaire and 15 on each of the student and staff questionnaires.

A third section for each questionnaire again asked a series of questions this time relating to how the vertical curriculum was being delivered. The reason for this separation was based on the belief that an individual might for example, agree with the philosophy behind the program, but think the way it is being delivered is lacking or compromising the intended outcomes. Again an introductory note was included highlighting some of the main features in how the vertical curriculum was administered in the school. Most of the questions were the same or similar for each of the student, parent and staff questionnaires. Each questionnaire featured 15 questions in this section, although a few of the final questions differed depending on the type of questionnaire.

Finally, each questionnaire had a section at the end for an open ended response to their thoughts or feelings about the program. Participants were directed to comment in particular on any of the statements they had disagreed to in the closed question sections. This was designed to contribute to the findings for the second research aim: to identify aspects of the program that need improving. Responses to open ended questions were sorted into nine groups or stems (see Table 4.2). These groups were then coded according to the theme of the response for cross-tabulation in the analysis stage.

Table 4.2

Descriptions of Stems for Open-ended Responses

General Positive Comments
General Negative Comments
Concerns Regarding Access at Right Ability Levels
Improvement Needed
Concern Regarding Restrictions in Unit Selections
Concerns with the Unit Selection Process
The Vertical Curriculum has had no Real Impact
Concern Regarding Gaps or Overlap in Units of Study
Concern Regarding Staff Involvement and Knowledge

To measure the attitudes of parents, students and staff to the closed statements, a five-point Likert scale was used and participants were asked to indicate their attitude to each statement by ticking the category that best corresponded to their level of agreement with the statement being made. A five-point scale was selected due to its reliability (Rodeghier, 1996). The categories for these were ordered from Strongly Agree to Strongly Disagree with a final category for “Don’t Know”. These categories were then assigned a value of 1 thru 5 as shown in Table 4.3. Analyses were conducted using continuous data, so lower scores indicate a higher level of agreement.

Table 4.3

Values for Five-Point Likert Scale used for Closed Statements

Values
1 = Strongly Agree
2 = Agree
3 = Disagree
4 = Strongly Disagree
5 = Don't Know

Letters to participants and the consent form for students can be found in Appendix

1. The questionnaires for each key group: parents, staff and students can be found in Appendix 2.

CHAPTER 5

RESULTS

“Most Australian schools are undoubtedly effective for some of their students, and some are no doubt effective for most of their students. It is that difficult next step of creating schools that are effective for all their students”.

(Piper, 1992, p. 160)

The results for the present study will be presented in four sections. The first section will illustrate the number of parents, students and staff who responded to the questionnaires and describe the background demographics of each of these groups. Then in order to answer the first research question: “Are parent, staff or student attitudes towards the vertical curriculum structure related to any of the background demographics provided by each of these types of respondents?” section two will present descriptive statistics used to determine whether any of these relationships exist on a statistically significant level. In particular, student responses will be examined by their gender, their current year level, the year level at which they entered the college and their attendance at information sessions associated with unit selection at the college. Parent responses will also be considered by their gender and attendance at information sessions as well as their age. Staff will be examined by their gender, age and the number of years experience in teaching. The view of this analysis is to determine whether any of these factors are statistically significant in affecting responses and hence whether the parents, students and staff can be considered respectively, as in-tact groups for any further analyses.

Each of the parent, staff and student questionnaires included questions associated with the philosophy behind the implementation of the vertical curriculum, and the delivery and administration of the vertical curriculum. All of the demographical information

provided by respondents will be considered for each of these two variables as well as for the total questionnaire.

Each of the questionnaires had a number of closed questions with responses to be made on the five-point Likert scale. Parents, students and staff had the same or similar questions on their respective questionnaires which enabled the comparison of responses between the three groups to each of the similar items. These comparisons are considered in the third section of the results. The object of this is to determine whether there was a statistically significant difference in the manner in which parents, students and staff responded to similar issues associated with the philosophy and delivery of the vertical curriculum.

The final section of the results looks to answer the remaining research questions. Descriptions are given of the relationships revealed in correlations and Chi Square analyses which were used to look for any significant associations in the way students, parents and teachers responded to particular questions in the questionnaires. For example, examining whether students are perceived to be making selections based on their friendship groups, or their individual interests. Finally, where analyses involving subscales were required, one-way Analysis of Variance (ANOVA) were used. ANOVA is usually applied when there are more than two groups being considered and tests whether their population means are equal (Wiersma, 1991). It is essential to select ANOVA when subscales are used because the subscales are composite scores and are thus unsuitable to use in a Crosstab analysis such as the Chi Square.

The research questions under consideration are:

1. Are attitudes towards the vertical curriculum structure related to the gender, the age, the year level, the number of years in teaching, or the attendance at information evenings by the parents, students or staff?

2. Is students' choice and decision-making about their learning programs related to motivation and engagement in their learning?
3. Is there a relationship between allowing students choice and decision making about their learning programs and their sense of ownership of their learning program?
4. Are students able to access units of study at the appropriate level for them, across all key learning areas?
5. Are life skills such as long term planning and responsibility promoted by expecting students to plan a pathway through the non-compulsory years?
6. Are relationships between staff and students, staff and parents and parents and students enhanced through students experiencing a greater sense of valuing because they are given the opportunity to discuss and plan for their individual interests with staff and parents?
7. Are there statistically significant differences in the level of agreement between parents, students and staff that:
 - a) there is an appropriate level of choice available?
 - b) unit selections are made according to interest and ability?
 - c) the appropriate level of information and advice is available regarding selection of units?
 - d) that a vertical structure is a better way of delivering the curriculum?

The variables used to examine each of the research questions are detailed in Table A9.3 of Appendix 9.

Parent Demographics

Parent questionnaires were distributed to 300 (50%) of the parents of students in Years 8 thru 11, selected at random. Of these 110 (37%) questionnaires were returned. Table A4.1 in Appendix 4 indicates that 75 (68%) of the parent respondents were female and 19 (17%) were male. 16 cases (15%) did not indicate gender. Parents who responded were mostly over 40 years of age. 107 (97%) of parents indicated their age and of those,

64% were aged between 41-50 years and 12% were aged over 50. This is not unexpected given these are parents of secondary aged students. There were some parents in the younger thirties age category representing 24% of the respondents (see Table A4.2 in Appendix 4). Inferential statistics show that there is no significant difference in attitudes of parents in their forties with parents who are over 50. Consequently these two groups will be treated as one and parents will be considered as younger (between 30 and 40) or older (over 40) for further analyses.

Parents were also asked to indicate how often they frequented information sessions about unit selections. These evenings are held annually and mark the beginning of the unit selection process for the next year's timetable. Information books and unit selection forms are distributed on these evenings and parents are encouraged to attend with their student(s). The information evening is held in two parts. The first is a general information session outlining key features of the selection process and important dates. The second and lengthier part of the evening is a workshop session in small groups where instructions are given on how to complete the unit selection form and time provided for individual families to begin filling in their selection form(s). Key staff members are present at the information sessions such as Key Learning Area (KLA) co-ordinators, careers advisors and homeroom teachers, to provide as much support and information that may be needed by individual students or parents. Half of the parents who responded to the questionnaires indicated that they always attend the information session. 37% indicated that they attend on some occasions and 12% have never attended the evenings while there was one case where the participant did not respond (see Table A4.3 in Appendix 4).

Staff Demographics

Of the 99 staff members who received a staff questionnaire 73 (74%) were returned. Just over half of these were female (52%) while 40% of staff respondents were male. 6 staff members (8%) did not respond to this question (see Table A4.1 in Appendix 4). Of the 99 staff members in the sample, approximately 60% were female and 40% male indicating a predominance of females on staff. The ratio of male to female staff in the sample was in line with the percentage of male and female respondents on staff which is 42% and 58% respectively.

Of the 73 staff respondents, 71 (97%) indicated their age bracket. Almost 70% of staff were aged above 40 with 35% in the 41-50 age bracket and 34% aged over 50. 31 to 40 year olds represent 23% of the staff while just 6 staff members (8%) are in their twenties (Table A4.2, Appendix 4). This is interesting to compare to the number of years of teaching experience displayed in Table A4.4 of Appendix 4, where 60% of the respondents have been teaching for more than 16 years: this figure consists of 24% of staff who have between 16 and 20 years teaching experience and 36% teaching for more than 21 years. The remaining 40% of respondents have been teaching for less than 15 years with 14 staff members (21%) with 11 to 15 years experience, 6% between 6 and 10 years and 9 teachers (13%) who are in their first 5 years of teaching. There were six cases where the teaching experience question was not answered. These are likely to include those staff who are support staff rather than teachers. These demographics represent that an experienced and aging staff are strongly represented in the school.

Student Demographics

Students in years 8 thru 11 received student questionnaires. 379 questionnaires were distributed to year 8 and 9 students, 197 year 10 students and 132 year 11 students

giving a total sample of 708 students. Of these, a total of 618 (87%) questionnaires were returned. Table A4.5 of Appendix 4 depicts the breakdown of student respondents by year level is not evenly distributed with 29% of the returned questionnaires coming from Year 8 students, 25% from Year 9 students, 28% from Year 10 students and just 18% from Year 11s. This was to be expected due to the unequal number of enrolments at each year level and the difficulty associated with the return of consent forms. However the percentage of students representing each year level were similar, all being in the 80th percentile.

Approximately equal numbers of males and females participated in the student questionnaire with 53% of student respondents being female and 47% male. The percentage of males and females are similar at each year level, with males being slightly lower than females in each case. Table A4.5 of Appendix 4 displays the total number of cases of males and females who participated in the present study by year level.

Students were asked to indicate their current year level and the year they began at the school. Table A4.6 in Appendix 4 indicates that the majority of students (94%) began at the school in Year 7. The remaining 6% of respondents entered the college at a later stage of their secondary schooling. This information was sought as part of the findings of the research will relate to whether the year level students commence at the college is statistically significant in any of the responses provided in the questionnaires.

Finally, to allow an analysis to determine whether attendance at information sessions is statistically significant, students were asked to indicate how often they frequented these sessions. Table A4.3 in Appendix 4 indicates that 590 (95%) of the 618 students responded to this question. Of these only 18% always attend the information sessions. Over half (55%) of respondents to this question attend on some occasions while 27% have never attended.

Descriptive Analyses of Demographic Background for Parents

The background demographics of the parent respondents indicated that many more females responded to the questionnaire than males. The ages of the parents can be considered as older (over 40) or younger (under 40) and there were more older parents than younger participating in the present study. Well over half of the parent respondents indicated that they always or sometimes attended the information sessions regarding unit selections while only a small percentage of respondents were never in attendance. The following descriptive statistics offers an analysis to determine whether any of these differences between parent respondents were significant in the manner in which they responded to the questionnaire.

Parent Gender

Parents indicated their gender and One-way Analysis of Variance (ANOVA) was applied to determine if Gender had any effect on the types of responses parents made in the questionnaire. Analyses were performed for the two sections of the questionnaire dealing first with the philosophy behind implementation and secondly with the delivery of the program. Levene's test for homogeneity of variances was not significant at $p > .05$ (see Table A6.1 of Appendix 6 for summary of tests for homogeneity of variances). Table 5.1 displays the raw scores for parent responses by gender with means and standard deviations of responses for the Philosophy and Delivery sections of the questionnaire. Results indicate that there was no statistically significant difference in the responses of male and female parents to the philosophy section of the questionnaire, with $F(1, 76) = .179, p > .05$ (Table 5.2). However there was a significant difference in responses at $p < .05$ between male and female parents as to their perceptions with the delivery of the program, with females being more positive about the program delivery overall.

Table 5.1

Statistics Summary for Parent Responses by Gender for each Section of the Questionnaire

Section of Questionnaire	N	Mean	SD
<u>Philosophy</u>			
Female	67	1.89	.44
Male	11	1.96	.55
<u>Delivery</u>			
Female	70	1.91	.26
Male	16	2.06	.18

Table 5.2

One-way ANOVA for Parent Responses by Gender for each Section of the Questionnaire

Section of Questionnaire	df	F	p
Philosophy	1, 76	.1798	.672
Delivery	1, 84	4.833	.031

Parent Age

Parents were asked to indicate their age bracket and these were analysed using One-way ANOVA applied to each section of the questionnaire, Philosophy and Delivery, and the Total Questionnaire to determine whether age had any effect on the responses parents made. Levene's test for homogeneity of variances was not significant at $p < .05$ level (see Table A6.1 of Appendix 6 for summary of tests for homogeneity of variances). Table 5.3 displays the raw scores for parent responses by age with means and standard deviations of responses for the Philosophy and Delivery sections of the questionnaire. Results indicate that parents in different age groups significantly differed in response to the philosophy behind implementation ($F(2, 85) = 4.47, p < .05$). However there was no

difference in responses at the $p < .05$ level between younger and older parents to the delivery of the program or for the total questionnaire (see Table 5.4). Scheffe's post-hoc test indicated that parents aged between 31 and 40 years differed with those aged 41 to 50 years at the $p < .05$ level, with the younger age bracket in more agreement with the philosophy behind implementation. Interestingly there was no significant difference between the 31-40 year olds and over 50s even though their means were as different as the 31-40 and 41-50 year olds. This is probably due to the small sample ($N = 12$) for the over 50 group. The effect size, determined by the η^2 statistic has a value of .095. This value was calculated manually as SPSS data does not provide the η^2 statistic in ANOVA analysis. However, information for its calculation is provided in the ANOVA table using the ratio of between groups sum of squares to total sum of squares. Table A5.2 of Appendix 5 shows summary descriptive statistics for effect of Parent Age.

Table 5.3

Descriptive Statistics Summary for Parent Responses by Age for each Section of the Questionnaire

Section of Questionnaire	N	Mean	SD
<u>Philosophy</u>			
31-40	22	1.64	.36
41-50	54	1.94	.47
over 50	12	1.98	.21
<u>Delivery</u>			
31-40	25	1.85	.25
41-50	62	1.93	.27
over 50	13	1.97	.21

Table 5.4

One-way ANOVA for Parent Responses by Age for each Section of the Questionnaire

Section of Questionnaire	df	F	p
Philosophy	2,85	4.476	.014*
Delivery	2,97	1.223	.298

* Scheffe's post-hoc test significant at $p < .05$ level

Parent Attendance at Information Evenings

Multivariate analysis of type of questionnaire by attendance at information sessions was performed to measure whether this had a significant effect on the manner in which parents responded to the questionnaire. Results of the MANOVA show that Cochran's univariate analyses of homogeneity of variance was not significant ($p > .05$) for the section dealing with the philosophy behind the program, but it was significant in responses to program delivery. Multivariate analysis of homogeneity was not significant (Boxes $M = 12.823$, $F(15, 8784) = .82$, $p > .05$). Refer to table A6.2 for summary of homogeneity of variance tests. Table 5.5A displays MANOVA results for the main effect of parent attendance at information evenings. As can be seen in this table Pillai's multivariate test indicates that attendance at these evenings was not significant in the manner in which parents responded to the questionnaire (Pillai's Trace with 4 df = .012, $F = 1.534$, $p > .05$). The univariate scales for each section of the questionnaire (Table 5.5B) also indicate that attendance at information evenings was not significant for responses to philosophy behind implementation of the program ($p > .05$) or regarding the delivery of the program.

Descriptive Analyses of Demographic Background for Staff

The staff respondents were almost even in their gender representation but what was apparent in the background demographics was the existence of an older and fairly experienced staff. A smaller number of younger and less experienced staff was represented. The following analysis offers descriptive statistics to determine whether gender, age or years of experience contributed significantly to the types of responses staff made on their questionnaire.

Table 5.5

Multivariate Analysis of Variance (MANOVA) Summary for Parent Attendance at Information Evenings

A. Pillai's Trace and F-test for the Main Effect (Parent Attendance)					
Pillai's Trace	df	F	p	Effect Size (f)	
.012	4	1.534	.190	.006	
B. Univariate F-tests for each Section of Questionnaire for the Main Effect (Parent Attendance)					
Section of Questionnaire	MS _{Hypoth}	MS _{Error}	F	p	Eta ²
Philosophy	.464	.156	2.971	.052	.011
Delivery	.055	.081	.682	.506	.002

df = 2, 507

Staff Age and Gender

Multivariate Analysis of Variance (MANOVA) was applied to determine whether a relationship between the age and gender of staff existed. MANOVA is used in this instance due to the possibility of a relationship between the two effects gender and age and also to reduce the chance of making a Type I error associated with a number of independent t-tests. MANOVA allows the analysis of a number of dependant variables at the one time. Results of the MANOVA show that Cochran's univariate analyses of homogeneity of variance were not significant ($p > .05$) for all of the effects. Multivariate analysis of homogeneity was also not significant (Boxes $\underline{M} = 11.72$, $\underline{F}(15, 968) = .58$, $p > .05$). Refer to table A6.3 for summary of homogeneity of variance tests. Table 5.6A displays MANOVA results for the main effect of age by gender for staff. As can be seen in this table Pillai's multivariate test indicates there is no relationship between age and

gender of staff (Pillai's Trace with 3 df = .415, $F = 2.275$, $p = .05$). The univariate scales for each section of the staff questionnaire (Table 5.6B) indicate that there was no relationship evident between age and gender of staff in regard to the philosophy behind implementation of the program ($p > .05$) but it was apparent in the section regarding the delivery of the program with a large effect size according to Cohen (1988) of (f) = .297.

Staff Gender

Gender of staff was examined for effect on the type of staff response to the questionnaire. Multivariate analysis results reported in Table 5.6A reveal that Pillai's multivariate test indicates gender alone has no effect on staff response (Pillai's Trace = .037, $F(1,26) = .486$, $p > .05$). Univariate tests of gender on response to each of the Philosophy and Delivery sections of the questionnaire indicate that gender was not significant ($p > .05$) in response type (see Table 5.6B). The strength of gender effect in each section of the questionnaire is measured by the eta-squared statistic (η^2).

Staff Age

Age was also measured as a main effect on staff response and as can be seen in Table 5.6A, Pillai's multivariate test indicates that age has no effect on staff response (Pillai's Trace = .398, $F(3, 26) = 2.154$, $p > .05$). Univariate test results (Table 5.6B) also indicate that staff age was not significant in the philosophy section of the questionnaire ($p > .05$) but it was a significant factor ($p < .05$) in responses to delivery of the program. The effect size measured by the η^2 statistic is quite large (0.350) for this effect. Further analysis was then performed on staff age to determine the nature of the difference. One-way ANOVA results indicate that staff age was not significant ($F = 2.265$, $p > .05$). See Appendix 5 for descriptive statistics.

Table 5.6

Multivariate Analysis of Variance (MANOVA) Summary for Staff Gender by Staff Age

A. Pillai's Trace and F-test for the Main Effects of Age by Gender, Age and Gender

Effect	Pillai's Trace	df	F	p	Effect Size (f)
Age by Gender	0.415	3, 26	2.275	.05	.208
Gender	0.037	1, 26	.486	.621	.037
Age	0.398	3, 26	2.154	.063	.199

B. Univariate F-tests on each Section of Questionnaire for the Main Effects of Age by Gender, Age and Gender

Section of Questionnaire	MS _{Hypoth}	MS _{Error}	F	p	Eta ²
<u>Philosophy</u>					
Age by Gender	.267	.177	1.504	.237	.147
Gender	.024	.177	.138	.713	.005
Age	.474	.177	2.664	.069	.235
<u>Delivery</u>					
Age by Gender	.178	.048	3.663	.025	.297
Gender	.048	.048	1.001	.326	.037
Age	.228	.048	4.680	.010	.350

df = 1, 26

Staff Teaching Experience

There was a range in the number of years of teaching experience of staff respondents, although the majority (60%) had more than 16 years. One-way ANOVA measured the significance of the years of teaching experience on the responses from staff to the Philosophy and Delivery sections of the questionnaire. Table 5.7 displays the raw score totals, means and standard deviations for responses to the questionnaire according to years of teaching experience.

Table 5.7

Descriptive Statistics Summary for Staff Responses to each Section of the Questionnaire by Years of Teaching Experience

Section of Questionnaire	N	Mean	SD
<u>Philosophy</u>			
0-5	7	2.12	.354
6-10	4	2.11	.712
11-15	6	2.22	.450
16-20	11	2.14	.475
over 21	18	2.49	.566
<u>Delivery</u>			
0-5	6	2.01	.092
6-10	4	2.01	.293
11-15	10	2.17	.209
16-20	11	2.15	.287
over 21	14	2.26	.241

Levene's tests for homogeneity of variance in responses by years of experience are not significant ($p > .05$) for either section of the questionnaire (see Table A6.4 of Appendix 6). Table 5.8 displays results of F-test which reveal that the years of experience are not significant in the type of response to questions regarding philosophy ($F(4, 41) = 1.255, p > .05$) or for questions regarding the delivery of the program ($F(4, 40) = 1.562, p > .05$).

Table 5.8

One-way ANOVA for Staff Responses to each Section of the Questionnaire by Years of Teaching Experience

Section of Questionnaire	df	F	p
Philosophy	4, 41	1.255	.3029
Delivery	4, 40	1.562	.203

Descriptive Analyses of Demographic Background for Students

A large number of students responded to the student questionnaire with each year level included in the sample represented by up to the 80th percentile. This large sample size should add to the validity of the student findings. Students were asked to respond to demographical questions regarding their gender, current year level, the year they commenced at the school and their attendance at information evenings. A slightly smaller number of males responded to the questionnaire than females at each year level. Respondents primarily commenced at the college in Year 7, and just over half of the respondents attended the information sessions on some occasion. Presented below are descriptive statistics for students to determine the significance of these demographics on their responses. A relationship between year level and gender were also considered for an effect on response type.

Student Year Level and Gender

One-way multivariate analysis (MANOVA) was applied to the student data to determine whether there was a relationship between gender and year level or indeed whether gender or year level had a significant effect on the type of response given in the questionnaire. MANOVA is used again in this instance due to the possibility of a relationship between the two effects year level and gender and also to reduce the chance of making a Type I error associated with performing a number of independent t-tests. Cochran's univariate analyses of homogeneity of variance were not significant ($p > .05$) for all of the effects. Multivariate analysis of homogeneity was significant (Boxes $M = 41.09$, $F(21, 443367) = 1.93$, $p < .01$). See Table A6.5 of Appendix 6 for results of tests for homogeneity of variances. Table 5.9A displays MANOVA results for the main effect of year level by gender for students. As can be seen in this table Pillai's multivariate test

indicate there is no relationship between year level and gender of students (Pillai's Trace with 6 df. = .011, \underline{F} = .775, $p > .05$). The univariate scales for sections of the student questionnaire (Table 5.9B) indicate that there was no relationship evident between year level and gender of students in regard to the philosophy behind implementation of the program or its delivery ($p > .05$ in both cases).

Student Year Level

Year Level was also measured in the multivariate analysis as a main effect on student response and as Table 5.9A shows, Pillai's multivariate test indicates that year level did have an effect on the manner in which students responded to the questionnaire (Pillai's Trace with 6 df = .035, \underline{F} = 2.55, $p < .05$). Cochran's univariate analyses of homogeneity of variance were not significant ($p > .05$) for the effects. Multivariate analysis of homogeneity was significant (Boxes \underline{M} = 41.09, \underline{F} (21, 443367) = 1.93, $p < .01$). Table A6.5 of Appendix 6 displays summary results for tests for homogeneity of variances. Univariate test results (Table 5.9B) indicate that student year level was significant in both the philosophy and delivery sections of the questionnaire ($p < .05$ in both cases). The effect size was however, reasonably small in each case with $\text{Eta}^2 = .019$ and $.029$ for the philosophy and delivery respectively. This indicates that between 1.9 and 2.9 % of the variance in responses to each section of the questionnaire can be accounted for by the student's year level, a small effect size.

One-way Analysis was performed on the effect of year level to investigate how this effect related to the students' responses with summary descriptive statistics shown in Table 5.10. Results (Table 5.11) confirmed that there was a significant difference in response according to year level (\underline{F} (3,505) = 3.22, $p < .05$). Scheffe's post-hoc test revealed that Year 8 students were significantly more positive in their response to the philosophy behind

the program compared to current Year 11 students, and its delivery at the $p < .05$ level. No other year levels were revealed as being significant in response type. Levene's test for homogeneity of variance was also significant in the one-way Analysis ($p < .05$) indicating that the variance between mean responses for each year level were not equal which detracts from the significance of this finding through the violation of the assumption of equal variances required for this type of analysis (see Table A6.7 for summary of tests for homogeneity of variance).

Table 5.9

Multivariate Analysis of Variance (MANOVA) Summary for Students' Year Level and Gender

A. Pillai's Trace and F-test for the Main Effects of Students' Year Level by Gender, Year Level and Gender					
Effect	Pillai's Trace	df	F	p	Effect Size (f)
Year Level by Gender	0.011	6	.775	.590	.005
Gender	0.001	2	.235	.791	.001
Year Level	0.035	6	2.558	.018	.017
B. Univariate F-tests on each Section of Questionnaire for the Main Effects of Year Level by Gender, Year Level and Gender					
Section of Questionnaire	MS _{Hypoth}	MS _{Error}	F	p	Eta ²
<u>Philosophy</u>					
Year Level by Gender	.189	.160	1.18	.315	.008
Gender	.073	.160	.458	.499	.001
Year Level	.461	.160	2.88	.036	.019
<u>Delivery</u>					
Year Level by Gender	.078	.087	.899	.441	.006
Gender	.022	.087	.255	.613	.001
Year Level	.380	.087	4.36	.005	.029

df = 4, 434

Student Gender

Student gender was examined on its own for effect on the type of response given to the questionnaire. Table 5.9A reveals that Pillai's multivariate test indicates gender alone has no effect on student response (Pillai's Trace with 2 df = .001, $F = .235$, $p > .05$) and a very small effect size of .001. Univariate tests of gender on response to the Philosophy of the program and Delivery sections of the questionnaire also indicate that gender was not significant ($p > .05$) in response type (see Table 5.9B). Multivariate tests for homogeneity of variance were significant (see Table A6.5 of Appendix 6). Univariate tests for homogeneity of variance indicated that Cochran was not significant ($p > .05$) but Bartlett-Box was significant for both the philosophy and delivery sections of the questionnaire (Table A6.5 of Appendix 6 for full summary of results).

Table 5.10

Descriptive Statistics Summary for Student Responses to each Section of the Questionnaire by Year Level

Section of Questionnaire	N	Mean	SD
<u>Philosophy</u>			
Year 8	130	2.07	.42
Year 9	127	2.17	.43
Year 10	153	2.12	.34
Year 11	96	2.23	.39
<u>Delivery</u>			
Year 8	136	2.15	.33
Year 9	126	2.22	.28
Year 10	151	2.21	.26
Year 11	94	2.29	.27

Table 5.11

One-way ANOVA for Student Responses to each Section of the Questionnaire by Year Level

Section of Questionnaire	df	F	p
Philosophy	3, 505	3.220	.022
Delivery	3, 506	4.166	.006

Student Year Commenced

The effect of Year Commenced was investigated to determine whether there was any significant difference in response to the questionnaire based on the year level of the student when they entered the college. Multi-variate analysis was performed to measure the effect of year began in each section of the questionnaire. Table 5.12A, Pillai's multivariate test indicates that year began did have an effect on the manner in which students responded to the questionnaire (Pillai's Trace with 6 df = .0331, $F = 2.429$, $p < .05$). Multivariate test for homogeneity were not significant at the $p > .05$ level (Boxes $M = 10.881$, $F(9, 1553) = 1.034$, $p > .05$). Univariate test results (Table 5.12B) indicate that year began was not significant in student response to the philosophy of the program (Variable A) with $p > .05$ but it was significant in how they responded to questions regarding the program's delivery ($p < .05$). The effect size for this significant factor was reasonably small with $\text{Eta}^2 = .026$, indicating a 2.6% variance in response to the program delivery being accounted for by the year in which student's began at the college. Univariate tests for homogeneity were significant for Cochran ($p < .05$) but not significant for Bartlett-Box ($p > .05$) for both variables measured (Table A6.6 of Appendix 6 shows full summary of tests for homogeneity).

One-way Analysis was performed for the effect of year began to response in the second section of the questionnaire, dealing with the delivery of the program. Results (see Table 5.13) confirmed that there was a significant difference in response according to year began ($F(3, 497) = 3.48$, $p < .05$), with Levene's test for homogeneity holding with $p > .05$. Scheffe's post-hoc test however, revealed no significant difference between the year level at which the students commenced in response to program delivery at the $p > .05$ level.

Table 5.12

Multivariate Analysis of Variance (MANOVA) Summary for Students' Year Level Began

A. Pillai's Trace and F-test for the Main Effects of Year Began					
Pillai's Trace	df	F	p	Effect Size	
.0331	6	2.429	.025	.017	

B. Univariate F-tests on each Section of Questionnaire for the Main Effect of Student Year Level Began					
Section of Questionnaire	MS _{Hypoth}	MS _{Error}	F	p	Eta ²
Philosophy	.199	.162	1.229	.298	.008
Delivery	.341	.088	3.873	.009	.026

df = 3, 433

Table 5.13

One-way ANOVA for Student Responses to each Section of the Questionnaire by Year Level Began

Section of Questionnaire	df	F	p
Delivery	3, 497	3.484	.015

Student Attendance at Information Evenings

Multivariate analysis of type of questionnaire (parent, student and staff) by attendance at information sessions was performed to measure whether this had a significant effect on the manner in which students responded to the questionnaire. Results of the MANOVA show that Cochran's univariate analyses of homogeneity of variance was not significant ($p > .05$) for the section dealing with Philosophy behind the program, but it was significant in student responses to the section regarding delivery of the program.

Multivariate analysis of homogeneity was not significant (Boxes $M = 12.823$, $F(15, 8784) = .82$, $p > .05$). Refer to table A6.2 for summary of homogeneity of variance tests. Table

5.5A displays MANOVA results for the main effect of attendance at information evenings. As can be seen in this table Pillai's multivariate test indicates that attendance at these evenings was not significant in the manner in which students responded to the questionnaire (Pillai's Trace with 4 df = .012, $F = 1.534$, $p > .05$). The univariate scales for each section of the questionnaire (Table 5.5B) also indicate that attendance at information evenings was not significant for responses to philosophy behind implementation of the program ($p > .05$) or regarding the delivery of the program.

Summary of Analyses of Background Demographics

Each of the three types of questionnaire: Parent, Staff and Student were analysed by background demographics to determine the effect had on the responses made to their respective questionnaires. Summary tables are presented below displaying where background demographics were significant in how the respondents answered questions in their questionnaire.

Table 5.14

Effect of Background Demographics on Parent Responses in each Section of the Questionnaire

Section of Questionnaire	Gender	Effect	
		Age	Attendance
Philosophy	Not Significant	Significant	Not Significant
Delivery	Significant	Not Significant	Not Significant

Note: Effects were measured using One-way ANOVA and Scheffe's post-hoc tests. Criterion of significant association is $p < .05$

Table 5.15

Effect of Background Demographics on Staff Responses in each Section of the Questionnaire

Section of Questionnaire	Gender	Effect	
		Age	Teaching Experience
Philosophy	Not Significant	Not Significant	Not Significant
Delivery	Not Significant	Not Significant	Not Significant

Note: Effects were measured using One-way ANOVA and Scheffe's post-hoc tests. Criterion of significant association is $p < .05$

Table 5.16

Effect of Background Categories on Student Questionnaire; Multivariate Analysis

Section of Questionnaire	Gender	Effect		
		Current Year	Year Began	Attendance
Philosophy	Not significant	Significant [†]	Not Significant*	Not Significant
Delivery	Not Significant	Significant	Not Significant*	Not Significant*

[†]Levene's test for homogeneity of variance significant at $p < .05$ level

*Cochran's test for homogeneity of variance significant at $p < .05$ level

Note: Effects were measured using One-way ANOVA and Scheffe's post-hoc tests. Criterion of significant association is $p < .05$

Comparison between Parent, Staff and Student Questionnaires

One of the aims of the present study was to determine whether there was any significant difference between parents, staff and students in how they felt about the vertical curriculum. This was measured through multivariate analysis of the responses each of these groups made in their respective questionnaires. Differences in responses were considered for the two variables - philosophy behind the program and the delivery of the program.

Multivariate analysis tested significant differences in responses to each section: Philosophy behind implementation and Program Delivery of each questionnaire. Multivariate tests for homogeneity of variance were not significant (Boxes $\underline{M} = 4.463$; $\underline{F} (6, 78461) = .733$, $p > .05$). Univariate tests for homogeneity of variance were also not significant for Cochran or Bartlett-Box for either variable ($p > .05$ in each case). Table 7A.1 of Appendix 7 displays summary results of homogeneity of variance tests. Table 5.17A displays MANOVA results for the how parents, students and staff responded to the two sections of the questionnaire. As can be seen in this table Pillai's multivariate test indicates that the manner in which parents, staff and students responded to their respective questionnaires was significantly different (Pillai's Trace with 4 df = .129, $\underline{F} = 19.531$, $p < .05$). The effect size was moderate according to Cohen (1988) with a value of (f) = .065 indicating that 6.5% of the variance in responses can be attributed to the type of respondent (parent, staff or student). The univariate scales for sections of the questionnaire (Table 5.17B) also indicate that these groups responded with significant difference to one another on both the philosophy behind implementation of the program and the delivery of the program sections of their respective questionnaires ($p < .05$ in each case). The former of these reported an Eta^2 statistic of .060 while the latter Eta^2 was .121. This indicates that between 6.0% and 12.1% of the variance in responses can be attributed to the type of respondent. Scheffe's post-hoc tests reveal that parents were significantly more positive in their responses to both sections of the questionnaire than the student and staff groups. Students also significantly differed to teachers in responses to the section dealing with the philosophy of the program. Here teachers were less positive overall in their responses to the philosophy behind implementation of vertical curriculum. However, teachers and students did not differ significantly from one another in the way they responded to questions regarding the delivery of the program.

Table 5.17

Multivariate Analysis of Variance (MANOVA) Summary for Effect of Type of Questionnaire

A. Pillai's Trace and F-test for the Main Effect of Type of Questionnaire					
Pillai's Trace	df	F	p	Effect Size	
.129	4	19.531	.000	.065	
B. Univariate F-tests on each Section of Questionnaire for the Main Effect of Type of Questionnaire					
Variable	MS _{Hypoth}	MS _{Error}	F	p	Eta ²
A: Philosophy	3.016	.165	18.212	.000	.060
B: Delivery	3.318	.085	38.687	.000	.121

df = 2, 562

One-way Analysis of Variance (ANOVA) was applied to results to measure the significance of responses made by the type of respondent (parent, staff or student) to the total questionnaire. Levene's test for homogeneity of variance was not significant at the $p > .05$ level (see Table 7.2 of Appendix 7). F-test indicates that parents, students and staff did significantly differ in their response to their respective questionnaires (see Table 5.18). Scheffe's post-hoc testing revealed that parents significantly differed in their responses to both students and staff, providing more positive responses; but staff and students were not significantly different from each other in responses at the $p > .05$ level. Summary statistics can be seen in Table 5.19.

Descriptive Statistical Analyses to Answer the Research Questions

The research questions differ in nature and consequently a number of different analysis tools had to be applied. Correlations were used to examine the strength of a

Table 5.18

One-way ANOVA for Effect of Type of Questionnaire on the Total Questionnaire

F	df	p
27.007	2, 528	.000

Table 5.19

Descriptive Statistics Summary for Responses to the Total Questionnaire by Parent, Student and Staff Respondent

Variable Type of Respondent	N	Mean	SD
Parent	83	1.900	.30
Student	408	2.179	.32
Staff	38	2.185	.31

Detailed results for the descriptive statistics can be found in Appendix 7.

relationship between selected variables, such as whether providing student choice in their learning programs was related to an increase in motivation and engagement in the classroom. Spearman's Rank Order Correlation was selected for analysis due to its appropriateness for nonparametric data (Pallant, 2001) that was used in this study. A number of questions on the questionnaire may relate to any one factor under consideration, and in these cases, subscales were created. Subscales were formed by taking composite values of the mean for survey questions that were related by their topic or theme. A coding grid was created where by the relevant questions from each of the parent, student and staff questionnaires were identified (see Appendix 9). Data was then coded to create each subscale by taking the mean score of the responses for the questions identified as relating to the given subscale. These subscales were then used in correlations when strength of a

relationship was required or one-way ANOVA when comparison of mean responses between parent, student and staff groups was required. These analyses allowed a number of research questions to be answered.

Remaining research questions required the use of another analysis tool. Chi Square tests for independence were applied when individual questions rather than subscales, were analysed for an association between the three groups, parents, students and staff. The Chi Square test was applied due to its association with categorical data (Pallant, 2001) and compares the frequency of cases found in the question being considered across the parent, student and staff groups. To make the data easier to analyse, when Chi Square analysis was used the five categories of responses (Strongly Agree, Agree, Disagree, Strongly Disagree and Don't Know) were recoded into three categories: "Agree", "Disagree" and "Don't Know".

Results for the correlations, chi-squares and ANOVA's are reported following.

To measure the strength of relationship between providing students choice and decision making and whether they appear or feel to be more motivated and engaged in their learning programs Spearman's Rank Order Correlation for non-parametric data was used. Assumptions for this statistical technique including randomness of samples and independent observations have been met. Overall there was a medium strength, positive correlation between the two variables ($r = 0.364$, $n = 782$, $p < .001$). Further analysis showed that teachers perceived a stronger relationship between offering choice and improvement in motivation and engagement than students or parents, although all were significant at the $p < .01$ level and all had spearman rho co-efficient in the medium range according to Cohen (1988). Table 5.21 shows results for Spearman's Rho for the parent, student and staff results.

Table 5.20

Spearman's Rank Order Correlation on Providing Choice Association with Student Motivation

Respondent	Spearman's Rho, r	N
Parent	.292**	106
Student	.344**	608
Teacher	.427**	68
Overall	.364**	782

**Correlation is significant at the $p < .01$ level (2-tailed)

The strength of relationship between providing students with choice and students feeling a sense of ownership of their learning programs was also measured using Spearman's Rank Order Correlation for non-parametric data. The assumptions of randomness and independence of observations were met. A medium strength, positive correlation between the two variables was evident in the overall results ($r = 0.335$, $n = 776$, $p < .001$). Further analysis showed that teachers again perceived a stronger relationship between offering choice and student ownership of their programs than the students or parents (see Table 5.21), although all were significant at the $p < .01$ level and all had spearman rho co-efficient in the medium range.

Spearman's Rank Order Correlation for non-parametric data was again utilised to measure the strength of relationship between long term planning skills and responsibility with expectations on students to plan an educational pathway through the compulsory years. Assumptions of randomness of samples and independent observations were again met. Again results indicate that overall a medium strength, positive correlation between the two variables existed ($r = 0.459$, $n = 791$, $p < .001$). Further analysis showed that teachers and parents both perceived a strong relationship between the two variables ($r = .706$ and $r = .631$ respectively) while students felt a medium strength association ($r = .393$).

All were significant at the $p < .01$ level. Table 5.23 shows summary results for Spearman's Rho for the parent, student and staff results.

Table 5.21

Spearman's Rank Order Correlation on Providing Choice Association with Student Ownership of their Learning Programs

Respondent	Spearman's Rho, r	N
Parent	.349**	104
Student	.316**	602
Teacher	.413**	70
Overall	.335**	776

**Correlation is significant at the $p < .01$ level (2-tailed)

Table 5.22

Spearman's Rank Order Correlation on Planning a Pathway Association with Long Term Planning Skills and Responsibility

Respondent	Spearman's Rho, r	N
Parent	.706**	109
Student	.393**	610
Teacher	.631**	72
Overall	.459**	791

**Correlation is significant at the $p < .01$ level (2-tailed)

During the unit selection process, students, parents and staff are all expected to be involved in discussions with one another regarding the students' interests and abilities. It was thought that this process would instill in students a greater sense of being valued because their opinions and interests were being considered in a way that does not happen in a traditional curriculum setting. To measure the outcome of this, Spearman's Rank Order Correlation was applied to examine the strength of association between students

feeling more valued and the discussion that occurs with staff and parents during the selection process. Results reveal that overall a significant relationship of medium strength did exist between these variables ($r = 0.343$, $n = 784$, $p < .001$). Parents tended to perceive a greater sense of association between the variables than students when individual type of respondent was analysed. Results reveal that as a group on their own, the staff did not perceive a significant association between discussions they had with students with the students sense of being valued ($r = 0.228$, $n = 65$, $p > .05$). Summary results are displayed in Table 5.23.

Table 5.23

Spearman's Rank Order Correlation on Discussions with Parents and Staff with Students Feel Valued

Respondent	Spearman's Rho, r	N
Parent	.419**	109
Student	.298**	605
Teacher	.228	65
Overall	.343**	784

**Correlation is significant at the $p < .01$ level (2-tailed)

Detailed results for all correlations can be found in Appendix 8.

To consider whether students are accessing units at the appropriate level a Chi Square test for independence analysis is applied to reveal any association between each type of respondent (parent, student and staff) and the manner in which they respond to the question regarding whether they each feel that access to units is at the appropriate level. Results indicate that 79.4% of cases agree that access to units is at an appropriate level. Parents and students are more in agreement that levels are appropriate (87.5% and 81.6% respectively) than the staff where only 50.0% of respondents agreed. The remaining staff felt that either students were not accessing units at an appropriate level (28.6%) or they did

not know whether access has been appropriate (21.4%). The Chi Square statistic revealed that there was a significant difference in the manner in which students, staff and parents responded to this question. Summary results are displayed in Table 5.24. All expected cell counts were above 5, as required for robustness of Chi Square tests (Pallant, 2001).

Table 5.24

Prevalence (%) of Responses among Parents, Students and Staff that Student Access to Units is at an Appropriate Level

Group	Type of Response			Total
	Agree	Disagree	Don't Know	
Parents	90 (85.7%)	10 (9.5%)	5 (4.8%)	105 (100%)
Students	498 (81.6%)	54 (8.9%)	58 (9.5%)	610 (100%)
Staff	35 (50.0%)	20 (28.6%)	15 (21.4%)	70 (100%)
Total	623 (79.4%)	84 (10.7%)	78 (9.9%)	785 (100%)

$\chi^2 (4) = 43.76, p < .001$

The final research question deals with the attitudes of parents, students and staff towards factors associated with unit selection, and the curriculum structure as a whole. The school was basing the philosophy of vertical curriculum in particular around giving students choice so they would be more engaged and motivated to learn in the programs they had chosen. So it becomes prevalent to ask the community whether they feel that an appropriate level of choice is actually available to them. A sub-scale was created from a number of questions relating to the amount of choice that was offered in the program. The frequency distribution to the types of responses made regarding the level of choice available (shown in Table 5.25) indicate that a strong proportion of parents (85 or 77.3%) agreed that sufficient choice was available while less than half of both student and staff

groups found the level of choice sufficient with only 276 (44.7%) of students and 26 (35.5%) of staff agreeing.

Table 5.25

Descriptive Statistics Frequency Summary for Sufficient Choice by Type of Respondent

Type of Respondent	Response	Frequency	Percentage of Total	Percentage of Respondents
Parent	Agree	85	77.3	80.2
	Disagree	20	18.2	18.9
	Don't Know	1	.9	.9
	Missing	4	3.6	
Student	Agree	276	44.7	45.2
	Disagree	321	51.9	52.5
	Don't Know	14	2.3	2.3
	Missing	7	1.1	
Staff	Agree	26	35.6	36.6
	Disagree	41	56.2	57.7
	Don't Know	4	5.5	5.6
	Missing	2	2.7	

One-way ANOVA was then applied to determine whether there was a significant difference in the way parents, students and staff responded to the question of choice being available. ANOVA was selected to test for this difference in this case because the Chi square test can not be applied to the composite scores associated with the sub scale created to look at the collective responses to questions regarding the level of choice available in the program. Levene's test for homogeneity of variances was significant at $p < .001$ level (see Table A6.9 of Appendix 6 for summary of tests for homogeneity of variances). Table

5.26 displays the raw scores for responses to whether there appears to be sufficient choice in the program with means and standard deviations of responses for parent, staff and student respondents. Results indicate that the different groups of respondents significantly differed in response to the level of choice being sufficient ($F(2, 787) = 23.19, p < .01$). Scheffe's post-hoc test indicated that parents differed in level of agreement from students and teachers at the $p < .01$ level, being more in agreement that the level of choice is sufficient than either of these other groups. Students and teachers who were in less agreement that a sufficient level of choice is available were not significantly different from one another in attitude.

Table 5.26

Statistics Summary for Sufficient Choice in Program by Parent, Student and Staff Respondent

Variable	N	Mean	SD
Parents	106	2.18	.69
Students	611	2.69	.82
Staff	71	2.94	.89

In comparison to this, respondents were also asked to respond to whether or not they felt that there were too many minimum requirements in the program. Chi Square tests for independence tested whether there was an association between the type of response and the type of respondent - Parents, Students and Staff. Results indicate that 56.8% of cases agree that there are too many minimum requirements and students are not readily able to specialise in an area of interest. Students made up a higher proportion of this statistic with 374 (61.6%) of cases agreeing that there are too many minimum requirements and thus their choice is restricted. 35 (49.3%) of staff and only 36 (34.3%) of parents agreed that

minimum requirements were too restrictive. The Chi Square statistic revealed that there was a significant difference in the manner in which students, staff and parents responded to this question. Summary results are displayed in Table 5.28. All expected cell counts were above five.

Table 5.27

One-way ANOVA Summary for Sufficient Choice among Parent, Students and Staff

Source	df	SS	MS	F
Between Groups	2	30.60	15.30	23.192**
Within Groups	785	517.91	.66	
Total	787	548.51		

** $p < .001$.

Detailed results for the descriptive statistics can be found in Appendix 8.

Table 5.28

Prevalence (%) of Responses among Parents, Students and Staff that Too Many Minimum Requirements Restrict Student Choice

Group	Type of Response			Total
	Agree	Disagree	Don't Know	
Parents	36 (39.7%)	58 (55.9%)	11 (10.5%)	105 (100%)
Students	374 (61.6%)	170 (28.0%)	63 (10.4%)	607 (100%)
Staff	35 (49.3%)	22 (31.0%)	14 (19.7%)	71 (100%)
Total	445 (56.8%)	250 (31.9%)	88 (11.2%)	783 (100%)

$\chi^2 (4) = 38.35, p < .001$

In contrast to the actual practice of providing sufficient levels of choice that parents, students and staff perceive to be available, the respondents were also asked to

consider whether the philosophy of the program actually provides choice. A second subscale was created here using questions from the philosophy section of each questionnaire. Again those parents who responded to questions making up the subscale were strongly represented in the proportion who agree that the program allows for choice in its structure where 53 (84.1%) of parents who responded were in agreement. Of the 618 students, only 258 responded to all of the questions involved with the sub-scale. Of these, 184 (71.3%) agreed that choice is allowed for in the philosophy, while the staff had 17 (56.7%) of the 30 who responded in agreement. Interestingly a relatively high number of missing cases were reported for this subscale: 47 (42.7%) of the parents, 360 (58.3%) of the students and 43 (58.9%) of staff. Table 5.29 displays the summary results for the frequency of responses.

Table 5.29

Descriptive Statistics Frequency Summary for Not Enough Choice by Type of Respondent

Type of Respondent	Response	Frequency	Percentage of Total	Percentage of Respondents
Parent	Agree	53	48.2	84.1
	Disagree	10	9.1	15.9
	Don't Know	0	0.0	0.0
	Missing	47	42.7	
Student	Agree	184	29.8	71.3
	Disagree	72	11.7	27.9
	Don't Know	2	.3	.8
	Missing	360	58.3	
Staff	Agree	17	23.3	56.7
	Disagree	13	17.8	43.3
	Don't Know	0	0.0	0.0
	Missing	43	58.9	

One-way ANOVA was again applied to this subscale to test for a significant difference in the way parents, students and staff responded to the philosophy that choice is provided within the structure. Results in Table 5.30 and 5.32 display the results, indicating that there was a significant difference ($F(2, 785), p < .001$). Homogeneity of variances was significant at $p < .05$ level (see Table A6.10 in Appendix 6). Scheffe's post-hoc tests revealed that staff were in significant less agreement to both students and parents at a $p < .001$ level, that the philosophy of the program provides a level of choice.

Table 5.30

Statistics Summary for Choice is Provided in the Philosophy of the Program by Parent, Student and Staff Respondent

Variable	N	Mean	SD
Parents	107	1.91	.57
Students	609	2.11	.63
Staff	70	2.44	.69

Table 5.31

One-way ANOVA Summary for Choice Provided in Philosophy among Parents, Students and Staff

Source	df	SS	MS	F
Between Groups	2	11.96	5.98	15.17**
Within Groups	783	308.40	.39	
Total	785	320.36		

** $p < .001$.

Detailed results for the descriptive statistics can be found in Appendix 8.

In Focus Group discussions, a number of assertions were made by both parents and staff that students based their selections on what their friends were doing as opposed to what their personal subject interests were. Consequently, this topic featured in the questionnaires for parents, students and staff. Chi Square analysis for independence was applied to the question that student selections appeared to be based on what their friends were doing to examine whether there was a significant association between the respondent: parents, students or staff and the manner in which they responded to this question. Results indicate that 31.6% of cases agree that students base their selections on what their friends are doing, with a total of 61.0% who disagree. The Chi Square statistic revealed that there was a significant difference in the manner in which students, staff and parents responded to this question. Parents tended to disagree more than agree with 64 (59.8%) cases who disagreed compared to the 38 (35.5%) of cases who agreed. Students were also in disagreement that their selections were based on what their friends were doing with 407 (66.8%) disagreeing. Teachers however showed a strong prevalence to agree with 55 (77.5%) of the staff agreeing that selections were based on friendships. Table 5.32 shows the summary results of the cross-tabulation for this question.

A significant amount of time and effort is devoted to the unit selection process, where students, staff and parents are all encouraged to participate. The school was particularly interested given the investment of time and resources that went into this process, that the level of information and advice was readily accessible and useful. To measure the extent of this a number of items on each questionnaire focused on the different aspects of information made available to assist students with their unit selections. A subscale was then created that incorporated each of the relevant questions so analysis could measure the level of success of the information made available. Parents who responded to questions making up the subscale were well represented in the proportion who agree that

Table 5.32

Prevalence (%) of Responses among Parents, Students and Staff that Students Base their Unit Selections on what their Friends are Doing

Group	Type of Response			Total
	Agree	Disagree	Don't Know	
Parents	38 (35.5%)	64 (59.8%)	5 (4.7%)	107 (100%)
Students	156 (25.6%)	407 (66.8%)	46 (7.6%)	609 (100%)
Staff	55 (77.5%)	9 (12.7%)	7 (9.9%)	71 (100%)
Total	249 (31.6%)	480 (61.0%)	58 (7.4%)	787 (100%)

$$\chi^2 (4) = 86.90, p < .001.$$

the information and advice is accessible and appropriate where 69 (64.5%) of parents who responded were in agreement. Conversely, students felt far less able to agree with only 169 (27.5%) of those who responded agreeing that the information and advice was accessible and appropriate, with a far greater proportion of cases (67.9%) in fact disagreeing on this scale. Just on half of the staff, 36 cases (50.7%) agreed that the information and advice made available during unit selections is both appropriate and accessible. Table 5.33 shows a summary of the descriptive statistics for frequency of responses.

One-way ANOVA was then applied to this subscale to test for a significant difference in the way parents, students and staff responded to the whether the information and advice was accessible and appropriate. Results in Table 5.34 and 5.36 display the results, indicating that there was a significant difference ($F(2, 791) = 30.52$), $p < .001$). Homogeneity of variances was significant at $p < .01$ level (see Table A6.11 in Appendix 6). Scheffe's post-hoc tests revealed that all three groups significantly differed from each other in the how they felt about the access and appropriateness of the information and

advice that is available during the unit selection period. Parents were significantly happier with the process than students or staff. Students were more in disagreement than the staff and the parents.

Table 5.33

Descriptive Statistics Frequency Summary for Information and Advice is Accessible and Appropriate

Type of Respondent	Response	Frequency	Percentage of Total	Percentage of Respondents
Parent	Agree	69	62.7	64.5
	Disagree	37	33.6	34.6
	Don't Know	1	.9	.9
	Missing	3	2.7	
Student	Agree	169	27.3	27.5
	Disagree	417	67.5	67.9
	Don't Know	28	4.5	4.6
	Missing	4	.6	
Staff	Agree	36	49.3	50.7
	Disagree	30	41.1	42.3
	Don't Know	5	6.8	7.0
	Missing	2	2.7	

Table 5.34

Statistics Summary for Information and Advice is Accessible and Appropriate by Parent, Student and Staff Respondent

Variable	N	Mean	SD
Parents	107	2.37	.82
Students	614	3.08	.88
Staff	71	2.77	1.06

Table 5.35

One-way ANOVA Summary for Information and Advice is Accessible and Appropriate

Source	df	SS	MS	F
Between Groups	2	48.01	24.01	30.52**
Within Groups	789	620.53	.79	
Total	791	668.54		

** $p < .001$.

Detailed results for the descriptive statistics can be found in Appendix 8.

The final question under analysis was asked to determine whether students, staff and parents perceived the vertically structured curriculum program to be a better way of structuring and delivering curriculum compared to the traditional curriculum delivery that was previously in place. Chi Square analysis was performed to measure whether there was any association between the results for this question by the type of respondent. Results indicate that 75.3% of cases agree that the vertical structure is a better way of delivering the curriculum. Parents and students were most in favour of the new structure where 92 (83.6%) of the 110 parents responded in agreement that the vertical curriculum is better than a traditional structure. The students had 474 (76.7%) of cases in agreement, while 37 (50.7%) of the staff agreed. The remaining staff were split between disagreeing 21 (28.8%) of cases and 15 (20.5%) who responded “Don’t Know”. The Chi Square statistic revealed that there was a significant difference in the manner in which students, staff and parents responded to this question. Summary results are displayed in Table 5.36. All expected cell counts were above 5.

Table 5.36

Prevalence (%) of Responses among Parents, Students and Staff that Vertical Curriculum is a Better Curriculum Structure

Group	Type of Response			Total
	Agree	Disagree	Don't Know	
Parents	92 (83.6%)	9 (8.2%)	9 (8.2%)	110 (100%)
Students	474 (76.7%)	58 (9.4%)	86 (13.9%)	618 (100%)
Staff	37 (50.7%)	21 (28.8%)	15 (20.5%)	73 (100%)
Total	603 (75.3%)	88 (11.0%)	110 (13.7%)	801 (100%)

$\chi^2 (4) = 35.24, p < .001$

Responses to Open-Ended Questions

Less than half of the participants elected to make a comment in the space provided with only 319 (39.8%) of respondents providing at least one comment. Many of those who did comment however, offered more than one comment providing a total of 123 (20.8%) of the comments from parents, 370 (62.6%) from students and 98 (16.6%) of the comments from staff. The cross tabulation looking at frequencies of responses according to the comment stems selected is summarised in Table 5.37.

Results indicate that slightly over 23% of all of the comments made by parents, students and/or staff were positive in their nature. Examples of this include from students comments such as “Smart Moves ‘Rox’”, and “Smart Moves is Cool”, which were taken to mean that students were pleased and positive about the program. Parent comments ranged from things like “I wish we had a program like this when I was at school” to “We have really noticed the difference in our children since Smart Moves was introduced – Well

Done!'. As shown in Table 5.38, Parents and Students make up 24.8% and 67.2% respectively of all of the positive comments made, while only 8.0% of the positive

Table 5.37

Overall Frequency of Types of Comments

Comment	% of Responses
General Positive Comments	23.2
Concern Regarding Restrictions in Unit Selections	27.1
Improvement Needed	13.0
Concerns Regarding Access at Right Ability Levels	9.5
Concerns with the Unit Selection Process	8.6
General Negative Comments	6.9
Concern Regarding Staff Involvement and Knowledge	4.9
Concern Regarding Gaps or Overlap in Units of Study	3.9
The Vertical Curriculum has had no Real Impact	2.9
Column Total	100

comments came from staff. The most encouraging aspect of the positive comments made was that the open-ended question actually directed participants to respond particularly if they had disagreed with statements in their questionnaire. Consequently, a significantly larger proportion of the comments offered were expected to be negative in nature and yet almost one quarter was in fact affirming the program.

The remaining comments, making up 76.8% of comments made, were concerns that parents, students and staff expressed about different aspects of the program. The most significant of these concerns, generally speaking, regarded restrictions in the unit selections. Here 27.1% of all the comments made fell into this category. Both parents and students tended to write along the lines of "There are too many minimum requirements".

Of the comments indicating concern with restrictions, the greater proportion came from the students with 88.1%. 5.6% of the concerns about restrictions were made by parents and 6.3% were made by staff.

The next most significant category overall involved the 13.0% of comments that referred generally to improvement being needed. The comments from parents and staff in particular were typically along the lines of “It’s a good idea (the vertical program) but it needs improvement”. Unfortunately where exactly the improvement is needed was unspecified by these respondents. Again comments in this category were heavily weighted towards the students who made up a 68.8% proportion of suggesting improvement. 14.3% of these comments came from the parents and 16.9% from staff.

Table 5.38

Frequency of Parent, Student and Staff Responses within each Category

Comment	% of Responses		
	Parent	Student	Staff
General Positive Comments	24.8	67.2	8.0
Concern Regarding Restrictions in Unit Selections	5.6	88.1	6.3
Improvement Needed	14.3	68.8	16.9
Concerns Regarding Access at Right Ability Levels	23.2	25.0	51.8
Concerns with the Unit Selection Process	37.3	54.9	7.8
General Negative Comments	29.3	36.6	34.1
Concern Regarding Staff Involvement and Knowledge	37.9	51.7	10.3
Concern Regarding Gaps or Overlap in Units of Study	34.8	39.1	26.1
The Vertical Curriculum has had no Real Impact	35.3	17.6	47.1

All of the other categories represented less than 10% of the total responses made. However, given the large proportion of students providing comments, these categories tend to be weighted by student responses. This is confirmed when Table 5.39 is perused and we see that of all the student responses, 24.9% were positive comments about the program and 38.1%; the most prevalent category of responses for students, was regarding concern about the restrictions in unit selections. Thus it is significant to look at the proportion of comments made for each category by type of respondent in Table 5.39 to determine where the most prevalent concerns expressed through the comments lie for parents and staff.

The Victorian Government Curriculum Standards Framework Draft II (CSF) forms the basis of the ability levels used to write the different units in the vertical curriculum. Students are advised to select at the CSF Level in each key learning area that they feel is most suited to their abilities in the given area. Staff are given an opportunity to review and recommend the access students have at the different CSF levels. The comments made expressing concern in this access was the greatest area of concern for staff where 29.6% of the comments made by staff were about the placement of students. Parents who made comments also expressed some concern in this area with 10.6% of parent comments falling in this category, the third most prevalent area of concern for them. Students seemed least concerned with their placement and access with only 3.8% referring to their CSF access.

The second most prevalent area of concern for staff as judged by the frequency of responses was a general negativity where 14.3% of staff comments fell. This was provided through comments such as “We should return to the old way”, “The structure needs to be used creatively”, “Staff need unit writing time”, and “The semester length units are not good for English”. The third most frequent comment from staff involved general comments noting that improvement is needed. Specific comments that were mentioned on more than one occasion included: “the unit selection form often has mistakes”, “parents

and students don't understand the unit codes", "We need more time to help students with selections", "Students can't design a pathway" and "Some Key Learning Area's don't offer units based on interests and abilities".

The most frequent type of response made by parents were general positive comments where 27.6% of comments made by parents fell into this category. Their next most prevalent category, expressing concern with the unit selection process saw 15.4% of parent comments featuring here.

Table 5.39

Frequency of Types of Comments Made by Parent, Student and Staff Respondents

Comment	% of Responses		
	Parent	Student	Staff
General Positive Comments	27.6	24.9	11.2
Concern Regarding Restrictions in Unit Selections	7.3	38.1	10.2
Improvement Needed	8.9	14.3	13.3
Concerns Regarding Access at Right Ability Levels	10.6	3.8	29.6
Concerns with the Unit Selection Process	15.4	7.6	4.1
General Negative Comments	9.8	4.1	14.3
Concern Regarding Staff Involvement and Knowledge	8.9	4.1	3.1
Concern Regarding Gaps or Overlap in Units of Study	6.5	2.4	6.1
The Vertical Curriculum has had no Real Impact	4.9	0.8	8.2
Column Total	100	100	100

CHAPTER 6

DISCUSSION AND CONCLUSIONS

“A century is a short time in education”
(Piper, 1999, p. 54)

This study had two main aims: To identify and measure the strengths of the Vertical Curriculum as perceived by the students, parents and staff in an effort to assess how well the program is meeting the set outcomes; and to identify aspects of the Vertical Curriculum that students, staff and parents perceive to need improving to better meet the intended outcomes of the project. These aims led to the necessity of defining the intended outcomes of the vertical curriculum and thus designing an instrument that would measure the attitudes of the parents, students and staff in the school’s community to assess whether the intended outcomes were in their perception, being met. The outcomes of the program thus formed a number of hypotheses which were tested through descriptive statistical analysis.

Summary of Findings

A number of key findings were made in this study. Significant differences (using one-way analysis of variance ANOVA and multi-variate analysis of variance MANOVA) were found for a proportion of the background demographics. Pearson’s Correlations revealed a number of associations between responses relevant to key outcomes of the program, as did Chi Square analyses. The following is a summary of findings as they relate to the hypotheses formed to address the research questions and thus intended outcomes of the vertical curriculum program.

Hypothesis 1A:

Responses to questionnaires will be equivalent across the background demographics gender, age, year level; year began, years of teaching experience and attendance at information evenings.

The hypothesis that there would be no differences in the manner in which participants responded based on their background demographics was not supported. One-way ANOVA and where appropriate, MANOVA, results indicated that while most demographic scales were not significant in the manner in which participants responded to their respective questionnaires, some of them were. Parent gender and the level of their attendance at information evenings did not affect the nature of their responses at a statistically significant level. Parent age was a significant factor though, where parents in the 41-50 age bracket were less positive in their responses to the philosophy behind implementation of the vertical program with an effect size of .095.

The manner in which staff responded to the different sections of their questionnaire was not statistically associated with any of the background demographics they provided. These included gender, age, and years of experience in teaching.

Students' responses were also examined by their background demographics. There was no statistical significance in responses by student gender, the year level at which they commenced at the school, or by the level of their attendance at information evenings. There was however significance detected according to the current year level of students, where current Year 8 students were significantly more positive than the Year 11 students who participated in the study both in their attitude towards the philosophy behind implementation and on the delivery of the vertical curriculum. The effect sizes for these were 0.019 and 0.029 respectively.

Hypothesis 1B:

Responses to questionnaires will be equivalent across parent, student and staff groups.

Multivariate analysis tested significant differences ($p < .05$) between the way parents, students and staff responded to questions regarding both the philosophy behind vertical curriculum and the manner in which it is being delivered with (refer to Table 5.17A for MANOVA results). Results indicate that the hypothesis that parents, students and staff would offer equivalent types of responses to their respective questionnaires was not supported. The amount of explained variance was 6.5%, a moderate value according to Cohen (1988), indicating that 6.5% of the variance in responses can be attributed to the type of respondent (parent, staff or student). The univariate scales for the two sections of the questionnaire (refer to Table 5.17B) also indicate that these groups responded with significant difference to both the philosophy behind implementation of the program and the delivery of the program sections of their respective questionnaires ($p < .05$ in each case). The former of these reported a 6% explained variance, while the latter revealed a 12.1% level of variance that can be attributed to the type of respondent. Overall, parents were significantly more positive about both the philosophy and the delivery of the vertical curriculum than either the student or staff groups. Students were also significantly more positive about the philosophy behind the program than staff, but these two groups did not differ at a significant level in their responses to how the program was being delivered.

Hypothesis 2:

There is no relationship between allowing students choice and decision making in their learning programs and their motivation and engagement in their learning.

The hypothesis that there would be no relationship between giving students choice and their level of perceived motivation and engagement in their learning programs was not

supported according to Spearman's Rank Order Correlation for non-parametric data. The results of this analysis (refer to Table 5.20) showed that there was in fact, a medium strength, positive correlation between the two variables at a significant level ($p < 0.001$). Further analysis showed that teachers perceived a stronger relationship between offering choice and improvement in motivation and engagement than students or parents, although all were significant at the $p < .01$ level and all had Spearman rho co-efficient in the medium range according to Cohen (1988).

Hypothesis 3:

Parents, students and staff feel there is no association between allowing students choice and decision making in their learning programs and their sense of ownership of their learning.

Spearman's Rank Order Correlation was again used to test for the strength of relationship between offering students choice and the level of ownership they felt over their learning programs. Results (see Table 5.21) indicate that the hypothesis that there would be no relationship was not supported with a medium strength, positive correlation between the two variables being evident at a statistically significant level ($p < 0.001$). Further analysis showed that teachers again perceived a stronger relationship between offering choice and student ownership of their programs than the students or parents, although all were significant at the $p < .01$ level and all had Spearman's rho co-efficient in the medium range.

Hypothesis 4:

Parents, students and staff believe that offering units at specific ability levels enable students to access units of study at a level that is appropriate for them.

Cross-tabulations provided frequencies with which parents, students and staff responded to the question regarding student access at appropriate levels. Overall, 79.4% of

parent, student and staff respondents agreed that access to units is at an appropriate level. Parents and students revealed a higher level of agreement (87.5% and 81.6% respectively) than the staff where only 50.0% of respondents agreed that access to units was at an appropriate level. The remaining staff felt that either students were not accessing units at an appropriate level (28.6%) or they did not know whether access has been appropriate (21.4%). Chi Square analysis revealed that there was a significant difference in the manner in which students, staff and parents responded to this question (refer to Table 5.24).

Hypothesis 5:

Parents, students and staff feel there is no association between expecting students to plan a learning pathway through the non-compulsory years and the promotion of responsibility and long-term planning skills.

Spearman's Rank Order Correlation for non-parametric data revealed that overall, the participants did respond in a manner such as to suggest there was a moderately strong association between long term planning skills and responsibility with expectations on students to plan an educational pathway through the compulsory years. Results (Table 5.22) indicate that teachers and parents both perceived a strong association between the two variables while students revealed a medium strength perception of association. All perceived associations were significant at the $p < .01$ level.

Hypothesis 6:

Parents, students and staff feel that there is no association between students feeling valued and the discussions that occur between them in the unit selection process.

The hypothesis that there would be no association between the discussions students are involved in with their parents and teachers regarding their unit selections and their sense of feeling valued was not supported in the case of parents and students who each responded to questions associated with these variables in a manner such that Spearman's

Rank Order Correlation revealed a medium strength positive correlation. Parents tended to perceive a greater sense of association between the variables than students when the individual type of respondent was analysed (see Table 5.23). However, the hypothesis was supported within the staff group where there was not a significant association ($p > .05$) between discussions staff had with students and the staff's perception of how this made the students feel in terms of their sense of being valued. The correlation co-efficient for the staff group (see Table 5.23), was also revealed as being small according to Cohen (1988).

Hypothesis 7A:

There is no statistically significant difference between parents, students and staff's beliefs that there is an appropriate level of choice available in the vertical curriculum program.

The hypothesis that there is a sufficient level of choice available in the vertical curriculum program was supported by parents, but not by students or staff. This was revealed in the results for the one-way ANOVA conducted where a statistical significant difference in the parent, staff and student responses was evident (refer to Table 5.27). The frequency distribution of responses (refer to Table 5.25) indicates that a strong proportion of parents (77.3%) agreed that sufficient choice was available while less than half of both student and staff groups found the level of choice sufficient with only 44.7% of students and 35.5% of staff agreeing.

A separate statement on each questionnaire asked parents, students and staff to opine whether there were too many minimum requirements and that this restricted student choice. Results are in keeping with those found for the hypothesis that there was sufficient choice where parents mostly disagreed (55.9%) that there were too many minimum requirements restricting the choice of students. Staff and student findings were also in keeping with previous results where 61.6% of students and 49.3% of staff agreed that there

are too many minimum requirements and thus student choice is restricted. This confirms that the hypothesis that there is a sufficient level of choice is supported by parents, but not by students or staff.

Hypothesis 7B:

There is no statistically significant difference between parents, students and staff's beliefs that students base their unit selections on what their friends are doing.

The hypothesis that students' unit selections are based on what their friends are doing was not supported overall with Chi Square analysis for independence indicating that overall 31.6% of respondents agree that students base their selections on what their friends are doing, and a total of 61.0% who disagree. The Chi Square statistic revealed that there was a significant difference in the manner in which students, staff and parents responded to this question. The hypothesis that unit selections are based on friendships was not supported by parents where 59.8% of parent cases disagreed compared to the 35.5% of cases who agreed. The hypothesis was not supported among students either where 66.8% of the students disagreed that their selections were based on what their friends were doing. Teachers however showed a strong prevalence with 77.5% of the staff agreeing that selections were based on friendships, and thus appearing to support the hypothesis. Table 5.32 shows the summary results.

Hypothesis 7C:

There is no statistically significant difference between parents, students and staff's beliefs that there is an appropriate level of advice and information that is available during the unit selection process.

The hypothesis that there is an appropriate level of information and advice that is appropriate and accessible appeared to be supported by parents with 64.5% of parent

respondents agreeing with this scale. However, evidence that the hypothesis is supported by staff is less convincing with only 50.7% of staff agreeing. The hypothesis was not supported by the students where only 27.5% of students agreeing and a far greater proportion (67.9%) of students disagreeing that the information and advice they seek is appropriate and accessible.

Hypothesis 7D:

There is no statistically significant difference between parents, students and staff's beliefs that the vertical curriculum is a better way of structuring the curriculum.

The hypothesis that parents, students and staff feel that the vertical curriculum is a better way of structuring the curriculum was supported with results indicating that 75.3% of all respondents agreeing that the vertical structure is a better way of delivering the curriculum. Chi square analysis indicated that there was a statistically significant difference in the way parent, student and staff participants responded (results displayed in Table 5.36), where 83.6% of the parents and 76.7% of the students responded favourably and only 50.7% of the staff agreeing that the vertical curriculum is a better structure. The remaining staff members were split between disagreeing (28.8% of cases) and not being sure that it is better with 20.5% staff responding "Don't Know".

Discussion

There were no preconceived notions as to how the background demographics might affect the manner in which students, parents and staff responded to the different sections of their respective questionnaires. The results here showed a statistically significant association with responses, namely that parents aged 41-50 were less likely to respond positively towards the philosophy behind the program, and that students in Year 8 were significantly more positive than those in Year 11 towards both the philosophy and the

delivery of the vertical curriculum. However, in both of these instances, the effect size was quite small.

For the parents aged 41-50 an effect size of .095 indicates that only 9.5% of the variability in responses can be attributed to the age of the parent respondent. Cohen (1988) tells us that this effect size is small. Furthermore, Pallant (2001) indicates that “with large samples, even very small differences between groups can become statistically significant” (p. 175) and using the effect size can actually be more elucidating when assessing the strength of an association being tested. In the parent sample group, there was a much larger proportion (64%) of parents in the 41-50 year old category than in the other categories. Given the effect size is quite small for this finding, and the group being flagged as significant was relatively large in sample size, the importance of the significant finding could be down-played.

In considering the importance of the statistically significant finding for the year level being associated with student responses, again the small effect size should be noted. Year eight students were found to be significantly more positive than students who were in Year 11 towards the philosophy and delivery of the vertical program. The effect sizes for these associations were 0.019 and 0.029 respectively. This indicates that between 1.9% and 2.9% of the variation in responses to the student questionnaires can be attributed to their year level - a very small association. This again reduces the level of importance of these findings.

If we were to consider reasons for the differences in year level however, it would be important to consider the relative age, maturity and experience that the students are at for their respective stages of education. Year 8 students had experienced as little of eight months of the vertical program at the time of data collection. It is possible to conceive that the novelty of the experience was still significant for them, thus inclining their attitudes

towards the positive end of the continuum. On the other hand, it is also possible (and as the results for Hypothesis 2 suggest) students are actually more excited, engaged and motivated about their learning due to the new structure they were in, thus scoring more highly on the scale. Year 11 students had certainly spent the majority of their secondary education in a traditional, horizontal structure, and whilst one might argue that this gives them more credibility to compare the two systems, their attitudes and opinions about curriculum delivery could already be leaning towards a more negative outlook by the time they reach this level.

Overall, the impact of the background demographics appears to have little effect on the manner in which responses are made. Though, strictly speaking, the hypothesis was not supported. The small Eta^2 statistics indicate that little of the variation in responses of those scales which showed statistical significance could be attributed to the demographic being tested.

The parents, students and staff were then treated as groups distinct from each other, but not by their demographics. When the three groups were tested for a difference in the way they each responded to their respective questionnaires, a significant association was revealed through both MANOVA and the follow-up ANOVA analyses. All three groups were significantly different in the attitudes they presented towards the philosophy behind the implementation of the program. Parents were most supportive, and teachers were least in agreement with the philosophy behind implementation. This suggests that staff may not have fully embraced the ideas behind vertical curriculum.

This is further evident when the staff responses to the open comments are considered. Two of the most prevalent categories for staff comments were general negative comments and general comments indicating improvement is needed, making up 27.6% of staff responses to the open-ended question. Comments, as revealed in Chapter 5

were not so much to do with the philosophies behind the vertical curriculum, but rather things like wanting more time to write units, and from the English department in particular who did not like the semester structure of the timetable. Evidence of the parents' positivity towards the program can also be gleaned from their comments where 27.6% of the parents general positive comments about the program featured as the most prevalent category for the parent group, in many instances offering congratulations for such a good program.

The parent, student and staff responses were also analysed for differences in how each group saw the delivery of the program. Once again, a significant difference was evident, but this time only the parents differed at a statistically significant level, again being more positive about the delivery and administration of the vertical curriculum than both the teachers and the students. Staff and students were not revealed as being different in their views on program delivery. This may be due to the fact that students and staff live and see the program in operation every day of the school year, while parent involvement is limited to anecdotes that their children may offer and any involvement they take in the unit selection process, which is for a limited period of time each year. This may also be supported by the fact that the second most prevalent category of responses made in comments from parents (after general positive comments) was in their concern with the unit selection process. This category is possibly the only significant involvement parents have in the program, where they can report on their first-hand experience. Outside of this, parents' experiences would mostly relate to how they see their children and their children's attitudes towards school. Comments from students in particular focused around the delivery of the program. Their comments made it quite evident that they found too many minimum requirements a big issue in restricting them from what they wanted to study.

With the differences between the parent, student and staff responses to the philosophy and delivery of the program in mind, analyses that looked for relationships

between responses were made to try to gauge whether the intended outcomes of the program were being achieved. The primary impetus around the introduction of vertical curriculum was the belief that giving students choice and decision-making power in their learning programs would help to motivate and engage them in their learning, and to give them a sense of ownership of their learning programs. These relationships were tested through Pearson's Rank Order Correlation and revealed that parents, students and staff all demonstrated a medium strength association between the two sets of variables: giving students choice and decision making about their learning programs would 1) engage and motivate them in their learning and 2) give them a sense of ownership of their learning programs. This finding supports the literature that students need to be involved in decision making about their learning as discussed in Chapter Two. In alliance with the findings that overall parents are more positive about the philosophy and delivery of the vertical curriculum, these results too showed that parents perceived a stronger relationship between each set of variables than the students or staff, although all were significant at the $p < .01$ level.

The structure of the program planned for students to be able to select units according to both their interests and their abilities. This intention arose through the exposure to research indicating that students need to study content that has some relevance to them and at the same time, tied in the ideas of differentiated curriculum. Thus the concept of writing thematic units within each key learning area would allow students to select contexts for their learning that they were interested in. The provision of adequate choice was tested by looking at frequency of responses and by performing ANOVA to test for differences in opinion between parents, staff and students. Results indicate that parents feel that an adequate level of choice is available in the program, but staff and students do not. I believe that students in particular are perhaps answering this question in regard to

their access to the choice of units available. They were strongly purporting that there are too many minimum requirements and thus their choice is restricted. This does not necessarily mean that there is not a reasonable amount of different units to choose from. Further study in the form of follow up interviews would have been appropriate here to identify exactly how this question was interpreted.

The ideas for accessing units at different ability levels across all key learning areas linked into the claim that students are most likely to succeed when expectations and self-concept are high (see Barber's Matrix in Chapter 2). In order to have high self-esteem though, students must be able to achieve so work can not be too difficult, or too easy. This theory seemed to fit well in vertical curriculum philosophy, as students could select each key learning area at a different level; one that best suited their ability in the given subject area. The extent to which parents, students and staff believed that this was being achieved was tested through Chi Square analysis revealing that parents and students both perceived access to appropriate levels was occurring (see Table 5.24 in Chapter 5). Staff however, were significantly less convinced that students are accessing units at an appropriate level. This was also evident in the comments staff offered where concern with student placement in appropriate levels was the most prevalent response from staff.

Parents and staff both perceived a strong relationship between expecting students to plan a pathway through the compulsory years of their education and the promotion of long term planning skills and responsibility according to Spearman's Rank Order Correlation analysis performed on these variables. Students also revealed a perception of association between these variables of medium strength. This factor was one of the secondary aims of introducing vertical curriculum, and one of the observations offered anecdotally by other vertically structured schools when we were investigating vertical curriculum. Even though strong relationships were revealed for parents and staff, this perhaps remains one of the

areas that is also in need of improvement. Students spend a significant proportion of the unit selection process supposedly developing and discussing their pathway with staff and parents. It also receives an emphasis on the information evenings held for parents and students where workshops are conducted to help students complete their planned pathway. It is interesting then to note that the comments offered expressed concern with the unit selection process, significant in particular for parents (see Table 5.39). Another comment that featured that would affect this aspect of the selection process are the comments made, particularly by students and parents, about the apparent knowledge of staff when they are asked to provide help with unit selections.

Closely linked to this is another “spin off” purported by the vertically structured schools visited in the investigative years of our own vertical curriculum. They revealed, again anecdotally, students’ sense of being valued is enhanced due to the discussions that occur at unit selection time. A relationship between the discussions that take place and the sense of value students feel as a result was tested through Spearman’s Rank Order Correlation co-efficient. The results revealed that parents and students did indeed gain a stronger sense of valuing as a result of the unit selection discussions they had with staff where a medium strength association between these variables was obtained. Staff responses however, did not reveal any association between the discussions they are involved in and how it might make students feel.

Most students did respond positively to questions about whether they felt a greater sense of being valued through the opportunities that existed to discuss with parents and staff what they wanted in their learning programs. However, there were a few comments offered regarding this that expressed a sense of outrage on the part of some students. These few students interpreted these questions to suggest that because they were involved in Smart Moves, we thought their parents would love them more, and they were quite upset

by this apparent assertion. This is a prime example of the interpretative bias that limits this study, as survey questions are always going to be open to interpretation by participants. Conversely, there were some very encouraging comments offered by parents in regard to this question. A number of parents reported that they found the discussions at unit selection time an opportunity to gain a rare insight into what their son/daughter was interested in that they're not sure they would have known otherwise, reporting that the teenage years are difficult in getting their children to talk to them. On the same theme however, a few parents reported that because the teenage years are so difficult to get their children to talk to them, the expectation of having to discuss unit selections with their children put an added strain on already tense relationships.

During focus group discussions parents and staff groups both made assertions that students made their unit selections based on what their friends were doing rather than looking at their own subject interests. For some parents and staff, this was expressed as an area of concern; others expressed that if it was the case, it was not really an issue. To measure the extent of perception from parents, students and staff as to the basis of students' unit selections this topic featured on each of the questionnaires and was subject to Chi-Square analysis. A small proportion of respondents did feel that students based their unit selections on what their friends were doing and this was a concern, but a much larger proportion (61%) disagreed. The chi-square statistic revealed that parents and students significantly differed in score from teachers on this scale. Both parents and students had a significant proportion attesting that students did not base their selections on their friendships, while over three quarters of the staff felt they did. There was a small cohort of students who admitted that their selections were based on their friends, but they were in the minority.

This is one aspect of the questionnaires where the Hawthorne effect may have a greater effect on results. The Hawthorne effect is a consideration of participant reactivity to being studied. That is, participants know they are being studied thus are inclined to respond in a certain way. It is possible here that students in particular, may sense that there is an appropriate response in terms of what might be perceived as a good or bad thing. It would be “bad” to select units based on what their friends are doing, so they respond that this is not the case. That said, it should be noted that some of the comments written by students in response to this question were adamant that their selections were their own, and they projected their offence that we would be suggesting that they would select units based on friendships rather than what they want for themselves. If the statistics presented by parents and students are a true reflection that students do not in the main base their selections on their friendships then the staff response becomes an interesting result. Here it would appear that staff experience of a minority of students taking advantage of the system becomes a generalised rule for all students in staff eyes.

The perception of the information and advice is important to the college in terms of the improvements that could be built into making this process and thus the units students find themselves studying as appropriate as possible. The success of meeting the philosophies behind the program hinge on this process. The results of Chi square analysis indicated that parents, students and staff significantly differed in their scores for the information and advice available being appropriate and accessible. Approximately three quarters of the parents agreed that the information was accessible and appropriate which is interesting in comparison to their comments where over 15% of comments made by parents were expressing concerns with the unit selection process, the second most prevalent category of comment made. These comments primarily expressed concern over the lack of consultation with parents when students had to change their initial preferences

to fit the timetable. Nearly 9% of parents also expressed concern with the apparent knowledge and involvement of the general staff (see Table 5.39 in Chapter 5). These comments centred on the problem of staff being unavailable to help students, or if they were available, could not help students. Some parents also commented that staff did not appear to know their children well, based on the advice they gave. Student comments here also expressed that staff were largely unavailable or unwilling to help. Some purported that staff tried to influence their selections.

Most of the student concerns about the unit selection process revealed in the comments however actually had to do with their restricted ability to change their selections once the timetable has been constructed. This is a difficult administrative issue, and the timetablers of the school will attest to the large number of students who do want changes post timetabling, which is based on the selections that students initially submit. The concerns regarding changes after timetabling are many. For example, minimum requirement tracking occurs upon initial selections. If students change their units from one key learning area to another after then the integrity of minimum requirements may not be met and students find themselves with a large number of minimum requirements to complete in the years following. In addition to this, classes are scheduled to run based on the number of students selecting the unit. If a large number of students opt out of a unit after timetable construction there can consequently be very small, and ultimately unviable, class sizes operating. This can and has led to the issue of workload equity amongst staff. One teacher ends up with a small class that under normal circumstances would not have run, whilst their colleagues have large classes, even if they are still within guidelines, because they have picked up the extra students who have changed their selection. The idea behind having a good unit selection process in the initial stages of selecting study programs

should mean that the number of changes that occur after timetabling is minimised and the associated issues will be reduced.

Some of the comments that offer improvement ideas in this area include allowing more one-on-one time for discussions with students at selection time; involving key learning area staff to advise on units in their area as their knowledge is more specific if they can look at their area only; many comments asked that the unit descriptions in the handbook are more detailed, and that staff are more careful to teach to the descriptions. Allowing more opportunities for students to talk to staff about their unit selections was certainly the most prevalent theme for suggesting improvements. This of course had logistic problems with finding time for staff and students to do this.

The final point of discussion is associated with the question asked of parents, students and staff regarding their thoughts on whether the vertical curriculum program is a better way of structuring the curriculum. This was essentially asked to get a sense of whether the community has, on the whole, felt that the new program has been worthwhile. The responses from parents and students were strongly in support of the structure, as were the responses they offered in the positive comments (see tables 5.37 and 5.38). Staff were overall supportive, although less convincingly than the parents and students. Approximately half of the staff agreed that it was a better system, just over one quarter who disagreed and the remaining staff who expressed that it had not stood the test of time and thus responded “Don’t Know”.

Summary

The two aims of the study were to measure the success of the vertical curriculum in meeting the intended outcomes and to identify any improvements needed so this could be done more effectively. The results reveal overall that the program has been successful

in motivating and engaging students better in their learning programs as perceived by the staff, student and parents of the school. They also appear to have a greater sense of ownership of their own learning programs and are generally learning long-term planning skills and a greater sense of responsibility through the processes involved in the structure. Students are reporting to feel a greater sense of valuing through their interactions with staff and parents during the selection process and are more able to study units that are interesting and relevant to them, at an appropriate level.

Areas identified as needing some improvement include the structure of the unit selection process so that a better level of information and advice is available for parents and students. The restrictions placed on students selections in terms of minimum requirements may need to be reviewed as it featured as a significant concern for students. This would have to be done carefully and in line with other pedagogical considerations of breadth of curriculum. There were after all, concerns expressed by parents, students and staff about gaps in knowledge and the impact they feel this might have on their Victorian Certificate of Education (VCE) studies.

I feel that the staff also need more in-servicing and opportunities to both input on the improvement structures to put in place and increase their involvement in the unit selection process. I found it a concern that staff were the least positive about the program on nearly every scale measured, and that so many parents and students commented on their lack of involvement in the unit selection process. After all, the program ultimately can only be as good as those who deliver it, which are the staff operating in the classroom. It is interesting though that the findings of staff tending to be more critical than parents and students is similar to findings found by Harrison (1997) in the review of a vertical curriculum at his secondary school in Melbourne. But, as with his study, the present study supports findings that overall show that the school community is generally supportive of

the curriculum and there is a greater sense that students are more motivated and involved in their learning programs.

The findings of the present study are quite significant to the school community, both in the affirmation of the work that has gone into the program and in highlighting the areas to work on from this point. The findings also acquire significance in confirming for the staff a lot of the anecdotal evidence they were presented with upon the implementation and planning phases of the curriculum about the outcomes a vertical curriculum can offer. Results indicate that the school could establish itself as a very attractive alternative for parents and students considering their secondary education. There is also significance in providing additional evidence to the body of research that differentiated curriculum that allows student involvement in making choices and decisions for themselves regarding their learning programs is a promising future for education.

The main area of interest for further study would lie in attempting to measure the impact of the “gaps” in learning that occur for some students through the differentiated nature of the program. Results in VCE studies could be compared to students who have participated in the vertical curriculum and compared to either historical figures of those students who experienced a traditional core approach to their studies or to other schools who operate a traditionally structured curriculum and who have a similar socio-economic community. Additionally, it would be interesting to explore the results of vertically structured curriculum in other school communities to see if the results from this study could be more generalised to other Victorian or Australian schools considering a vertical curriculum.

It will be interesting to see the impact that the current curriculum reform, due for implementation in 2005, will have on programs such as the vertical curriculum presented in this study. The level of convincing research reveals a strong case for differentiating

curriculum to suit individual needs and pathways. Middle school reform appears in all literature to support the notion of individual program design that meets both student needs whilst challenging them in the different Key Learning Areas of the curriculum, at their own level. In light of this the current reform talks about standardised reporting against year level outcomes, a step away from the Curriculum Standards Framework's levels that have a more natural feel for adapting to differentiated pathways. An examination of how schools who are currently embracing structural reform in their program delivery would make interesting review once the curriculum reform has been in place for a few years.

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APPENDICES

Appendix 1

Letters of Instructions to Participants

INFORMATION LETTER TO PARENTS

TITLE OF PROJECT: SMART MOVES REVIEW

NAME OF SUPERVISOR: KEN SMITH

NAME OF STUDENT RESEARCHER: MELLITA JONES

NAME OF PROGRAMME IN WHICH ENROLLED: MASTER OF EDUCATION (RESEARCH)

Dear Parent/Guardian,

I am conducting a research project through Australian Catholic University on the Vertical Curriculum Smart Moves Project at Damascus College, Ballarat. This study will form a component in the completion of my Master of Education (Research).

Smart Moves was implemented in 2001 and has now been running for two full years. In this study I would like to assess how the staff, students and parents perceive different aspects of the program. In particular, I am looking to identify both the successful aspects of Smart Moves and the areas of the program that need improving. This data would then be made available to the college who will then look to improve the program in the identified areas.

The questionnaire contains some background information about why the Smart Moves Project was implemented and how it is being administered. Please read through this information before responding to the questions. Responses to each statement in the questionnaire can be made by ticking the box that best corresponds to your level of agreement with the statement being made. The questionnaire should take approximately 15 minutes to complete.

Staff, students and parents in the Damascus community are asked to participate in the study. The results of the study will be published through the Australian Catholic University. The data will also be provided to the college so they can use the information to improve the curriculum structure and the way it is administered at the college.

You may choose not to participate in the study and do not owe any explanation of this decision. There are no identifying questions on the questionnaire and hence anonymity is assured at all stages of the research.

Any questions regarding this project should be directed to Ken Smith of Australian Catholic University and/or Mellita Jones of Damascus College, Ballarat at the addresses outlined below.

Contact:	Mellita Jones	Ken Smith, PhD, MAPS
Telephone:	5330 2747	9953 3257
School:	Damascus College	Education
Campus Address:	1412 Geelong Rd. Mt. Clear, 3350	115 Victoria PDE, Fitzroy, 3065.

Results of the research will be summarised in the school newsletter. Any further information may be requested by contacting the school.

This study has been approved by the Human Research Ethics Committee at Australian Catholic University.

In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Investigator or Supervisor and Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee care of the nearest branch of the Research Services Unit.

Chair, HREC
C/o Research Services
Australian Catholic University
Melbourne Campus
Locked Bag 4115
FITZROY VIC 3065
Tel: 03 9953 3157
Fax: 03 9953 3315

Any complaint or concern will be treated in confidence and fully investigated. The participant will be informed of the outcome.

INFORMATION LETTER TO STAFF

TITLE OF PROJECT: SMART MOVES REVIEW

NAME OF SUPERVISOR: KEN SMITH

NAME OF STUDENT RESEARCHER: MELLITA JONES

NAME OF PROGRAMME IN WHICH ENROLLED: MASTER OF EDUCATION (RESEARCH)

Dear Staff Member,

I am conducting a research project through Australian Catholic University on the Vertical Curriculum, Smart Moves Project, at Damascus College, Ballarat. This study will form a component in the completion of my Master of Education (Research).

Smart Moves was implemented in 2001 and has now been running for two full years. In this study I would like to assess how the staff, students and parents perceive different aspects of the program. In particular, I am looking to identify both the successful aspects of Smart Moves and the areas of the program that need improving. This data would then be made available to the College who will then work with staff to improve the program in the identified areas.

The questionnaire contains some background information about why the Smart Moves Project was implemented and how it is being administered. Please read through this information before responding to the questions. Responses to each statement in the questionnaire can be made by ticking the box that best corresponds to your level of agreement with the statement being made. The questionnaire should take approximately 15 minutes to complete.

Staff, students and parents in the Damascus community are asked to participate in the study. The results of the study will be published through the Australian Catholic University. The data will also be provided to the college so you can use the information to improve the curriculum structure and the way it is administered at the college.

You may choose not to participate in the study and do not owe any explanation of this decision. There are no identifying questions on the questionnaire and hence anonymity is assured at all stages of the research.

Any questions regarding this project should be directed to Ken Smith of Australian Catholic University and/or Mellita Jones of Damascus College, Ballarat at the addresses outlined below.

<i>Contact:</i>	<i>Mellita Jones</i>	<i>Ken Smith, PhD, MAPS</i>
<i>Telephone:</i>	<i>5330 2747</i>	<i>9953 3257</i>
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In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Investigator or Supervisor and Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee care of the nearest branch of the Research Services Unit.

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C/o Research Services
Australian Catholic University
Melbourne Campus
Locked Bag 4115
FITZROY VIC 3065
Tel: 03 9953 3157
Fax: 03 9953 3315

Any complaint or concern will be treated in confidence and fully investigated. The participant will be informed of the outcome.

INFORMATION LETTER TO STUDENTS

TITLE OF PROJECT: SMART MOVES REVIEW

NAME OF SUPERVISOR: KEN SMITH

NAME OF STUDENT RESEARCHER: MELLITA JONES

NAME OF PROGRAMME IN WHICH ENROLLED: MASTER OF EDUCATION (RESEARCH)

Dear Student,

I am conducting research through Australian Catholic University on the Smart Moves Project at Damascus College, Ballarat. This study will form a component in the completion of my Master of Education (Research).

In this study I would like to obtain your feedback about Smart Moves. In particular, I would like to know what you think the successful aspects of Smart Moves are and also if you think there are areas of the program that need improving. This data would then be made available to the College who will look to improve the program in the identified areas.

The questionnaire contains some information about why the Smart Moves Project was implemented and how it is being administered. Please read this information before responding to the questions. Responses to each statement in the questionnaire can be made by ticking the box that best corresponds to your level of agreement with the statement being made. The questionnaire should take approximately 15 minutes to complete.

Damascus staff and parents are also being asked to participate in the study. The results of the study will be published through the Australian Catholic University. The data will also be provided to the college so they can use the information to improve the curriculum structure and the way it is administered at the college.

You may choose not to participate in the study and do not owe any explanation of this decision. There are no identifying questions on the questionnaire and hence anonymity is assured at all stages of the research.

Any questions regarding this project should be directed to Ken Smith of Australian Catholic University and/or Mellita Jones of Damascus College, Ballarat at the addresses outlined below.

<i>Contact:</i>	<i>Mellita Jones</i>	<i>Ken Smith, PhD, MAPS</i>
<i>Telephone:</i>	<i>5330 2747</i>	<i>9953 3257</i>
<i>School:</i>	<i>Damascus College</i>	<i>Education</i>
<i>Campus Address:</i>	<i>1412 Geelong Rd. Mt. Clear, 3350</i>	<i>115 Victoria PDE, Fitzroy, 3065.</i>

Results of the research will be summarised in the school newsletter. Any further information may be requested by contacting the school.

This study has been approved by the Human Research Ethics Committee at Australian Catholic University.

In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Investigator or Supervisor and Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee care of the nearest branch of the Research Services Unit.

Chair, HREC
C/o Research Services
Australian Catholic University
Melbourne Campus
Locked Bag 4115
FITZROY VIC 3065
Tel: 03 9953 3157
Fax: 03 9953 3315

Any complaint or concern will be treated in confidence and fully investigated. The participant will be informed of the outcome.

PARENT/GUARDIAN CONSENT FORM

TITLE OF PROJECT: SMART MOVES REVIEW

NAMES OF STAFF SUPERVISORS: KEN SMITH

NAME OF STUDENT RESEARCHER: MELLITA JONES

I (*the parent/guardian*) have read and understood the information provided in the Letter to the Participants. Any questions I have asked have been answered to my satisfaction. I agree that my child, nominated below, may participate in this activity, realising that I can withdraw my consent at any time. I agree that research data collected for the study may be published or may be provided to other researchers in a form that does not identify my child in any way.

NAME OF PARENT/GUARDIAN:

SIGNATURE DATE.....

NAME OF CHILD

SIGNATURE OF PRINCIPAL SUPERVISOR:..... DATE:.....

SIGNATURE OF STUDENT RESEARCHER : DATE:.....

Appendix 2

Parent, Student and Staff Questionnaires

Smart Moves Review - Parent Questionnaire

Background Information: Please circle the appropriate response.

Gender: M F

Age Bracket: 20-30 31-40 41-50 over 50

What Year Level did your student(s) begin at Damascus? 7 8 9 10 11

I/We have attended the Information Evening about Unit Selections: Always Sometimes Never

The Survey:

There are two categories being addressed by the review. These are 1. Philosophy and 2. Structure and Administration.

Please respond to each point by circling the box that best represents your view. Space is provided at the end of each section for any further comments you may like to include.

Section A: Addressing Philosophy of Smart Moves

The introduction of Smart Moves was driven by the by the desire to individualise the curriculum and hence better engage individual students at Damascus College. We believed this could be done by:

- Providing students with the opportunity to study all KLA's at an appropriate level.
- Allowing students to select units of interest where they could specialise in areas of particular interest while still maintaining a broad core curriculum.

By creating these opportunities it was believed:

- Students would be more engaged in their learning
- Students would be more motivated if they were selecting units of interest
- Students would have more ownership of their learning programs.
- Life-long skills such as long term planning would be enhanced.
- Discipline issues in the classroom would be reduced.
- Absenteeism would be reduced.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.	Smart Moves allows students the opportunity to study all Key Learning Areas at an appropriate level.	<input type="checkbox"/>				
2.	Smart Moves provides an opportunity for students to study units that are of more interest to them than the prescribed curriculum we used to deliver.	<input type="checkbox"/>				
3.	Students have some choice between Key Learning Areas allowing them to specialise in an area of interest.	<input type="checkbox"/>				
4.	Sufficient breadth across the curriculum is ensured by setting minimum requirements.	<input type="checkbox"/>				
5.	In general, students appear to be more motivated about school since the introduction of Smart Moves.	<input type="checkbox"/>				
6.	In general, students appear to be more engaged in their learning programs since the introduction of Smart Moves.	<input type="checkbox"/>				
7.	Allowing students to map out their unit selections promotes responsibility.	<input type="checkbox"/>				
8.	Allowing students to map out how they will meet their minimum requirements promotes long-term planning skills.	<input type="checkbox"/>				
9.	Allowing students to map out their unit selections promotes ownership of their learning.	<input type="checkbox"/>				
10.	Allowing students an active role in designing their learning programs promotes involvement.	<input type="checkbox"/>				
11.	Ongoing consultation by staff with students, through the selection process, promotes the valuing of students.	<input type="checkbox"/>				
12.	Smart Moves is a better way of delivering the curriculum.	<input type="checkbox"/>				
13.	Smart Moves provides an opportunity for you to enhance your relationship with the school.	<input type="checkbox"/>				
14.	Smart Moves provides an opportunity for you to enhance your relationship(s) with your child(ren) about their education.	<input type="checkbox"/>				

Section B: Addressing the Structure and Administration of Smart Moves

This section looks at the way we have structured the Vertical Curriculum and how it is administered. Some of the features of the structure and administration are outlined below:

- Setting of minimum requirements in each KLA to ensure students experience breadth in their learning
- Offering Advanced, Foundation and Standard units in English and Mathematics.
- Writing of units to CSF levels to assist staff, students and parents in identifying and selecting appropriate levels of study.
- Parent Information Evenings and Workshops to help with unit selections.
- Unit Selection Forms that list units completed and minimum requirements remaining.
- A two-stage process of checking the units selected by students.
- Consultation with students when they can not get all of their preferred units.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.	A sufficient level of choice is available within each Key Learning Area.	<input type="checkbox"/>				
2.	Students have some choice between Key Learning Areas allowing them to specialise in an area of interest.	<input type="checkbox"/>				
3.	There are too many minimum requirements and students do not have enough opportunity to specialise in areas of interest.	<input type="checkbox"/>				
4.	Your child(ren) seem to study units at a level that is appropriate for them.	<input type="checkbox"/>				
5.	The Parent Information Evening is useful in assisting with unit selections.	<input type="checkbox"/>				
6.	Workshops where families work in small groups with staff are useful in assisting with unit selections.	<input type="checkbox"/>				
7.	The Handbook is clearly set out and easy to use.	<input type="checkbox"/>				
8.	The unit descriptions in the handbook seem to provide enough detail about what is covered in the unit.	<input type="checkbox"/>				
9.	Students appear to make their selections based on what their friends are doing and this is a concern.	<input type="checkbox"/>				

10.	Students seem able to make changes to their unit selections too easily.	<input type="checkbox"/>				
11.	Staff should be actively involved in checking that unit selections are at an appropriate level for your child(ren).	<input type="checkbox"/>				
12.	It is important for staff to consult with students if they miss out on their first preferences.	<input type="checkbox"/>				
13.	Staff should be actively involved in advising units of study to students.	<input type="checkbox"/>				
14.	It is important for staff to consult with parents if they miss out on their first preferences.	<input type="checkbox"/>				
15.	Your child(ren) discuss their unit selections with you.	<input type="checkbox"/>				

Please add any comments you would like to make in relation to the philosophy or structure and administration of the Smart Moves Program. In particular, if you disagreed with any of the statements, suggestions for improvement would be appreciated.

Smart Moves Review - Staff Questionnaire

Background Information: Please circle the appropriate response.

Gender: M F

Age Bracket: 20-30 31-40 41-50 over 50

Years of Experience in Teaching: 0-5 years 6-10 years 11-15 years 16-20 years over 21 years

The Survey:

There are two categories being addressed by the review. These are 1. Philosophy and 2. Structure and Administration.

Please respond to each point by circling the box that best represents your view. Space is provided at the end of each section for any further comments you may like to include.

Section A: Addressing Philosophy of Smart Moves

The introduction of Smart Moves was driven by the by the desire to individualise the curriculum and hence better engage individual students at Damascus College. We believed this could be done by:

- Providing students with the opportunity to study all KLA's at an appropriate level.
- Allowing students to select units of interest where they could specialise in areas of particular interest while still maintaining a broad core curriculum.

By creating these opportunities it was believed:

- Students would be more engaged in their learning
- Students would be more motivated if they were selecting units of interest
- Students would have more ownership of their learning programs.
- Life-long skills such as long term planning would be enhanced.
- Discipline issues in the classroom would be reduced.
- Absenteeism would be reduced.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.	Smart Moves allows students the opportunity to study all Key Learning Areas at an appropriate level.	<input type="checkbox"/>				
2.	Smart Moves provides an opportunity for students to study units that are of more interest to them than the prescribed curriculum we used to deliver.	<input type="checkbox"/>				
3.	Students have some choice between Key Learning Areas allowing them to specialise in an area of interest.	<input type="checkbox"/>				
4.	Sufficient breadth across the curriculum is ensured by setting minimum requirements.	<input type="checkbox"/>				
5.	In general, students appear to be more motivated at school since the introduction of Smart Moves.	<input type="checkbox"/>				
6.	In general, students appear to be more engaged in their learning programs since the introduction of Smart Moves.	<input type="checkbox"/>				
7.	Allowing students to map out their unit selections promotes responsibility.	<input type="checkbox"/>				
8.	Allowing students to map out how they will meet their minimum requirements promotes long-term planning skills.	<input type="checkbox"/>				
9.	Allowing students to map out their unit selections promotes ownership of their learning.	<input type="checkbox"/>				
10.	Allowing students an active role in designing their learning programs promotes involvement.	<input type="checkbox"/>				
11.	Ongoing consultation with students through the selection process promotes the valuing of students.	<input type="checkbox"/>				
12.	A Vertical Structure is a better way of delivering the curriculum.	<input type="checkbox"/>				
13.	Smart Moves provides an opportunity for staff to promote their relationships with parents.	<input type="checkbox"/>				
14.	Smart Moves provides an opportunity for staff to promote their relationships with students.	<input type="checkbox"/>				
15.	Behaviour incidents in class have generally declined since the introduction of Smart Moves.	<input type="checkbox"/>				

Section B: Addressing the Structure and Administration of Smart Moves

This section looks at the way we have structured the Vertical Curriculum and how it is administered. Some of the features of the structure and administration are outlined below:

- Setting of minimum requirements in each KLA to ensure students experience breadth in their learning
- Offering Advanced, Foundation and Standard units in English and Mathematics.
- Writing of units to CSF levels to assist staff, students and parents in identifying and selecting appropriate levels of study.
- Parent Information Evenings and Workshops to help with unit selections.
- Unit Selection Forms that list units completed and minimum requirements remaining.
- A two-stage process of checking the units selected by students.
- Consultation with students when they can not get all of their preferred units.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.	A sufficient level of choice is available within each Key Learning Area.	<input type="checkbox"/>				
2.	Students have some choice between Key Learning Areas allowing them to specialise in an area of interest.	<input type="checkbox"/>				
3.	There are too many minimum requirements and students do not have enough opportunity to specialise in areas of interest.	<input type="checkbox"/>				
4.	The majority of students study units at a level that is appropriate for them.	<input type="checkbox"/>				
5.	Parent Information Evening is useful in assisting students with unit selections.	<input type="checkbox"/>				
6.	Workshops where families work in small groups with staff are useful in assisting with unit selections.	<input type="checkbox"/>				
7.	The Handbook is clearly set out and easy to use.	<input type="checkbox"/>				
8.	The unit descriptions in the handbook provide enough detail about what is covered in the unit.	<input type="checkbox"/>				

9.	Students appear to make their selections based on what their friends are doing and this is a concern.	<input type="checkbox"/>				
10.	Students seem able to make changes to their unit selections too easily.	<input type="checkbox"/>				
11.	Staff should be actively involved in checking that unit selections are at an appropriate level.	<input type="checkbox"/>				
12.	It is important to consult with students if they miss out on their first preferences.	<input type="checkbox"/>				
13.	You initiate discussions with students about selecting units at an appropriate level during the selection process.	<input type="checkbox"/>				
14.	If students ask you questions about Smart Moves you are confident in answering them or directing them to someone who would know.	<input type="checkbox"/>				
15.	The movement of students through CSF levels is tracked sufficiently.	<input type="checkbox"/>				

Please add any comments you would like to make in relation to the philosophy or structure and administration of the Smart Moves Program. In particular, if you disagreed with any of the statements, suggestions for improvement would be appreciated.

Smart Moves Review - Student Questionnaire

Background Information: Please circle the appropriate response.

Gender: M F

Current Year Level: 8 9 10 11

What Year Level did you begin at Damascus? 7 8 9 10 11

My parent/guardian attended the Information Evening about Unit Selections: Always Sometimes Never

The Survey:

There are two categories being addressed by the review. These are 1. Philosophy (Reasons we have Smart Moves) and 2. Structure and Administration (the way we organise the unit selections). Please respond to each point by circling the box that best represents your view. Space is provided at the end of each section for any further comments you may like to include.

Section A: Addressing Philosophy of Smart Moves

We introduced Smart Moves to try to make school more interesting and relevant for you, the students. We also wanted you to be able to help design your own learning program that might be different from other people in your 'Year level'. Another important feature was to allow you to study different subjects at the right level for you.

By creating these opportunities it was believed that you:

- Would be more motivated to learn because you were selecting units of interest.
- Would have more ownership of their learning programs because you helped design it through your selections.
- Would have your life-long skills such as long term planning enhanced by mapping out your minimum requirements.
- Would experience more success by studying units at the right level for you.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.	Smart Moves allows you the opportunity to study all Key Learning Areas at an appropriate level.	<input type="checkbox"/>				
2.	Smart Moves provides an opportunity for you to study units that are of more interest to you.	<input type="checkbox"/>				
3.	There is some choice between Key Learning Areas allowing you to specialise in an area of interest.	<input type="checkbox"/>				
4.	Setting minimum requirements allows you to experience a good range of skills and knowledge across the curriculum.	<input type="checkbox"/>				
5.	In general, you feel more motivated at school since the introduction of Smart Moves.	<input type="checkbox"/>				
6.	In general, you feel more motivated to learn because you can select units that interest you.	<input type="checkbox"/>				
7.	Mapping out your unit selections makes you feel responsible for your learning program.	<input type="checkbox"/>				
8.	Mapping out your minimum requirements helps you to think about what you want to do in the future.	<input type="checkbox"/>				
9.	Making unit selections makes you feel like you own your learning program.	<input type="checkbox"/>				
10.	You feel that you are involved in decision making about your learning program.	<input type="checkbox"/>				
11.	When you are talked to about what you would like in your learning program you feel valued.	<input type="checkbox"/>				
12.	Smart Moves is a better way of delivering the curriculum.	<input type="checkbox"/>				
13.	Talking to your parents about your unit selections allows you to improve your relationship with them.	<input type="checkbox"/>				
14.	Talking to your teachers about your unit selections allows you to have a better relationship with them.	<input type="checkbox"/>				
15.	You feel less likely to muck around during class time when you have chosen the unit of study.	<input type="checkbox"/>				

Section B: Addressing the Structure and Administration of Smart Moves

This section looks at the way we have structured the Vertical Curriculum and how it is administered. Some of the features of the structure and administration are outlined below:

- Setting of minimum requirements in each KLA to ensure you experience breadth in your learning
- Offering Advanced, Foundation and Standard units in English and Mathematics.
- Parent Information Evenings and Workshops to help with unit selections.
- Unit Selection Forms that list units completed and minimum requirements remaining.
- A two-stage process of checking the units you select.
- Consultation when you can not get all of your preferred units.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.	There are enough units to choose from within each Key Learning Area.	<input type="checkbox"/>				
2.	There is some choice between Key Learning Areas allowing you to specialise in an area of interest.	<input type="checkbox"/>				
3.	There are too many minimum requirements and you do not have enough opportunity to specialise in areas of interest.	<input type="checkbox"/>				
4.	The majority of your units are at a level that is appropriate for you.	<input type="checkbox"/>				
5.	The Information Evening is useful in assisting you with unit selections.	<input type="checkbox"/>				
6.	Workshops where families work in small groups with staff are useful in assisting with unit selections.	<input type="checkbox"/>				
7.	The Handbook is clearly set out and easy to use.	<input type="checkbox"/>				
8.	The unit descriptions in the handbook provide enough detail about what is covered in the unit.	<input type="checkbox"/>				
9.	The majority of your unit selections are based on what your friends are doing.	<input type="checkbox"/>				
10.	When you want to change your selections you have to give a good reason.	<input type="checkbox"/>				

11.	You talk to your teachers about the right level for you when you are selecting units.	<input type="checkbox"/>				
12.	You talk to your parents about your unit selections.	<input type="checkbox"/>				
13.	You get enough advice about the right level for you when you are selecting units.	<input type="checkbox"/>				
14.	Your teachers are able to help you when you have questions about your unit selections.	<input type="checkbox"/>				
15.	It is important to consult with you if you miss out on your first preferences.	<input type="checkbox"/>				

Please add any comments you would like to make in relation to the philosophy or structure and administration of the Smart Moves Program. In particular, if you disagreed with any of the statements, suggestions for improvement would be appreciated.

Appendix 3

Minutes from Focus Group Meetings

Student Focus Groups:**Smart Moves Review****SRC Focus Group****Monday, 28th October, 2004****Positives:**

- Social Bond is important for Sem 1 Yr 7. Good to move into Smart Moves in Sem 2. Unanimous agreement that we shouldn't move to beginning of Year 8. One suggestion was one fixed group for all classes in Sem 1 and then a different fixed group for all classes in Sem 2.
- Good to have a taste/experience of the different Arts and Technology in Sem 1
- More comfortable with units when you know you chose them – happier
- Variety of units within KLAs mostly good
- Good to mix with different students in different classes
- School is better
- Some teachers helpful with advice
- Good to use Homeroom teacher to help map out min requirements
- Pastoral Care lessons were good preparation (last years Yr 7s) but not as good this year
- Info night good for first experience of selections but then not really necessary – know how to fill in sheet – need help with levels
- System is MUCH BETTER, but need to improve information/process

Negatives/Concerns

- 7's and 8's have very little choice
- too many minimum requirements – no space for special interests (PE)
- need to drop 1 minimum requirement in Science, SOSE, Arts & Technology
- need more choice in Yr 8 English units
- Time given to make selections is too short – especially for Yr 9-10 who often try to plan out next 3 years to ensure the best choices are made
- Need more time to discuss options with class teachers – especially need recommendation from them about appropriate level.
- Year 7's need much more help. Most had no idea
- Unit descriptions need more detail
- Overlapping of content in Science units a problem
- Staff don't talk to students about changing their levels in Maths & English – a couple of teachers great – others don't talk to students at all
- Last year there was a VCE expo – this year no info at school about VCE units
- SOSE units overlapping – 2 different units used the same text – same Chapter – same Qs!

- Some units overlap between KLAs – RE-SOSE (India/poor/etc) SCI-SOSE (environment)
- Science units very boring depending on the teacher – some do little to no prac!
- Minimum requirements for strand not tracked
- Year 7's 'told' not asked about what they can/want to do
- Information from different staff is very inconsistent – confusing!!
- Some teachers don't seem to know much – if asked a general Question they either say 'don't know' and don't recommend where to go or say they'll find out but never get back to you
- Need more 'experts' to talk to
- Issue when mix of Yr level is 2 students of one Yr in a class full of older or younger.
- Covering of content in the same unit is too different depending who the teacher is
- Reduction in Min Requirements if LOTE is studied to end of Yr 10 is not advertised clearly enough

Smart Moves Review

Students who Didn't Submit Selection Forms Focus Group

Thursday, 31st October, 2002.

Reasons given for not completing unit selections:

- Lost sheet
- Just forgot
- Away on day of computer entry
- Not sure – just didn't
- Absent when sheet was due – then forgot
- Didn't know it had to be handed in
- 2 students were new to the school after the initial selection process
- 2 said they did hand it in but Homeroom teacher lost it
- information to get new sheet from Homeroom teacher was at office, office said HL, HL said HR teacher – gave up

Parent Focus Group:**Smart Moves Review****Parent Focus Group****Monday, October 28, 2002.****Positive Aspects:**

- Students taking a real interest in school – they love to read through the different units in the handbook. They feel empowered and excited by the opportunity to choose.
- A feeling of confidence among students and parents that any mistakes in selections will be picked up by staff in the checking process.
- Younger siblings are excited by the selection process – a positive drawing card for students/families deciding on a secondary school.
- Provides a great opportunity for parents to share the selection process with their children – learn more about their interests.
- Mapping out their four years promotes responsibility and thinking skills (life skills).
- Students appreciate the valuing attached to selections – what they think/want is important; they get to make decisions about their learning.
- Great that the language is shared (parents, students, teachers).
- Strengths of the program outweigh the weaknesses.

Concerns and Improvements:

- In parent-teacher-student interviews staff sometimes still talking ‘Year Levels’ not ability (CSF) Levels.
- Friendship Groups drive unit selections or changes to initial selections. This is compounded by the ease with which students are able to alter their selections, well after submitting them.
- Change of teacher for Maths and English at the semester break is a concern. Teacher and student waste valuable learning time trying to establish capability and learning style. Prefer one teacher for the year in these core areas.
- Double periods of Maths and English in the afternoons does not promote effective learning in these core areas.
- Students ‘living for the here and now’ in terms of unit selections – no real evidence of serious planning for future education/vocation.

Parent Information Evening

- Formal talk probably not necessary once you have been through the selection process once.
- Target Year 7 families (or just new families) and provide comprehensive information and selection support, then they will be right for future years.
- Year 7's pick handbook up at information evening (more likely to attend information session), send it home for older students.
- Workshops on filling in selection forms a much better idea.
- Invite trained parents to assist other families in unit selections at information sessions.
- Selection form has all key elements – excellent resource tool, easy to read/follow.
- It would be good to show strand minimum requirements in the Minimum Requirements Table (awareness of some KLA strand requirements but not others)

General Curriculum

- Year 7 program needs to remain set for Semester One.
- Year 7's definitely need to stay with the same group for the bulk of their classes in semester 1 (exception for Maths and English where ability grouping should take precedence).
- Integrated units would be excellent – Primary Years set the mentality, Secondary Years should run with it.

Staff Focus Groups:**Smart Moves Review****General Staff Focus Group****Monday, 14th October, 2002.**

After a general information session outlining the goals and stages of the review process, staff split into House Groups. Within the House Groupings staff were asked to split into 4 – 5 small discussion groups and provide feedback on 4 key areas:

Aspects that Smart Moves has been successful in meeting

1) General Philosophy and 2) Unit Selection Process

and ways in which improvement is needed or can be achieved in meeting

3) General Philosophy and 4) Unit Selection Process.

Other points/concerns were also invited.

The general philosophy was outlined in the initial information session so staff were reacquainted in the ideals we were striving for by introducing Smart Moves.

Feedback from the discussions is outlined below.

1. Aspects of Smart Moves that have been successful in meeting the General Philosophy:

- Providing the element of choice
- Giving responsibility for own level
- Opportunity to study at own level (x2)
- Teacher more able to pitch classes at a consistent level
- 5 – period allocation
- Level of excitement among students
- Motivation & engagement of students achieved through choice of units (x2)
- Teacher can validate fact that student chose unit and use this as a motivator.
- Aspects of a KLA can be chosen by a student (eg Biol & chem. But don't have to do Physics)
- Some improvement in the 'middle' group of student behaviour
- Motivated kids are as engaged as ever
- Top kids able to study at higher levels

2. Aspects of Smart Moves that have been successful in the Unit Selection Process:

- Parent Information evening very successful (x3)(some H'rooms better than others)
- Handbook is a detailed resource

- One-to-one is fantastic (but only if staff member understands the process)
- Good breadth of choice.
- Process is improving – lots of action taking place (counselling etc)

3. Ways that improvement is needed or could be achieved in meeting the General Philosophy:

- Choice is still very limited
- No real choice between KLAs, only within them. Too many Minimum Requirements?
- English & Maths need Year long teacher for better learning and development of teacher-student rapport
- Teacher-student relationship does not have much chance to develop with semester changes (x2).
- Staff need to change attitudes to testing and assessment practices. Need to drastically improve teaching methodology to incorporate multiple intelligences and learning styles (x2)
- How do we deal with emotional problems and depression of students in our classes?
- When students choices clash there are too many ending up in class they have NO interest in
- Having to complete minimum requirements at expense of their 1st or 2nd choices.
- Limit exposure to subject areas in junior school.
- Students still entrenched in Year Level mentality.
- Meeting needs of 7A/8A in Smart Moves
- Teachers need to recognise that classes are still mixed ability and be skilled to cope with this.
- Transition still needs a bigger focus for Year 7's – establishing friendship groups (x2).
- Suggest class groupings for Year 7 Sem 1 in houses or even Homerooms.
- Still not placing all students at appropriate levels
- More allowance/recognition for extra-curricular learning (music, dance, etc)
- Need integrated units to allow credits for multiple KLAs. This would provide more flexibility for students – ie 2 languages!
- An objective measure like a test could show what students have and haven't done.
- Too many choices which students often miss out on anyway. Should we offer less choice, more pathway?
- Need pathways.
- Kids are dodging subject areas, not achieving broad education – kids not tasting the many options in areas like Arts.
- Less time allocated at Vic St but see more students
- Some subjects dying through lack of numbers.
- How do we push the slack kids who are taking the easy option?
- Too much disconnecting of students from teachers compounded by the semester change.
- We still have Year Level classes in most areas, students who are in mixed age move out if they are in minority
- Behavioural change not evidenced in some students (but can't see what would help)
- Philosophy Limited by dual campus situation

4. Ways that improvement is needed or could be achieved in the Unit Selection Process:

- Getting students to read Information Handbook
- Students make inappropriate choices driven by friends (x3)
- Too many changes allowed in early weeks. Cut-off date not stuck to. (x2)
- Need to advertise that they may not get all of their selections.
- Consider blocking subjects first then students sign up – first in best dressed.
- Selections done so far in advance – what happens if they ‘fail’ a subject?
- A lot of students are repeating units (x2)
- Overlapping of unit content – units must be exclusive
- Allocating students to empty spaces – extreme lack of choice
- Need better tracking of students achievements and completion of CSF levels so students access appropriate levels (x9)
- No accountability for ‘failing’ units
- Need more KLA involvement – Co-ordinators meeting with students (x2)
- Need user-friendly language in Handbook – too esoteric for parents (x2)
- Class teachers need more opportunity to recommend suitability of certain units to the students/parents (x5).
- Use representatives from each KLA (exhibition of units). Students move around ask rep’s for advice/info about suitable units.
- A single person can’t be well enough informed about all KLAs.
- Criteria for movement between CSF levels needs to be established
- More time with homeroom teachers to fill in selections. (Discuss min req’s, likes/dislikes, strength, future plans etc.
- Timetable not flexible enough – need to cater for other programs like VCAL
- Staff need information on selection early
- Educate Year 7’s and their parents really well, less needed later.
- One-to-one time needed to be factored in with students – replace one of our inservice days for this.
- Staff ideals compromise students choices at certain levels – can’t access level they want/feel capable of.
- Unit descriptions need more detail, Book needs to be accurate!

5. Other:

- Is a 5 period allocation necessary for every KLA? A 3/2 split might be more useful in some areas.
- What is the \$ cost factor?
- Yr 10 need VCE option in Technology.
- Not much change for Yr 9/10!
- Skills need to be taught sequentially.
- Subjects are being offered without suitable staffing or facilities.
- Great concern from Fine Arts about what is being cut out of Year 7 program.
- Year 7 need more work on organization, homework, requirements for class, etc
- Year 7 needs to be a whole Year program, fewer teachers as possible, taste all possibilities
- Too many ‘things’ come in without consultation

Smart Moves Review

House Leaders Feedback

Wednesday 16th October, 2004

House Leaders at Mt. Clear and Vic. St. met separately to discuss and respond to a number of points regarding Smart Moves. Feedback is outlined below.

1) Do you believe that the unit selection process can provide pastoral opportunities for staff to work with students and if so how?

- Not appropriate for Mt. Clear staff because they don't know the curriculum or the students moving from yr 9 to 10.
-

- Opportunity exists but not for a long time.
- Hroom teachers part of info evening good – some staff stressed by it
- Problems with Yr 9s and choosing of VCE units

2) In what ways do you believe Smart Moves is providing more effective learning opportunities for individual students?

- No response from Mt. Clear House Leaders
-

- What can we afford/timetable?
- Strong in Maths – effective grouping

3) In what ways do you believe Smart Moves is compromising the learning opportunities of individual students?

- Need greater teacher guidance in selections
 - There is a loss of connection with students as they move each semester which has a pastoral and academic impact. This is most significant in Year 7 and Year 10.
-

- Pass/Fail – students moving through levels without necessarily achieving previous level – Is there a 'pass' for Level 5 Health before Level 6 can be accessed?
- Theory of being able to move sideways in a level is not happening

4) What strategies could be employed to better cater for individuals needs within Smart Moves?

- Improve tracking of students – record level of performance
 - Need to check validity of rules versus flexibility.
-

- Integration of subject areas/ free up choices
- Teacher PD in catering for student needs – time given to methodology

5) In what ways do you believe the motivation and engagement of students can be measured?

- No Response from Mt. Clear House Leaders
-

- Number of students out of class may indicate lack of motivation/engagement
- Motivation could be measured by the degree to which students participate and complete work

6) Other points/concerns:

- Concern that student choice is a ‘fiction’ – curriculum/staffing pre-determine offerings.
 - Concern that Smart Moves has become ‘ability driven’ and moved away from set aims.
 - Loss of ability to deal with Year Level cohort
-

- Mistakes on forms/book embarrassing for HouseLeader’s, but did offer pastoral things
- Motivation of staff – stress leave
- Integration students – landing in classes they don’t choose makes it harder for teachers
- Semester units makes it hard to get to know students
- Students lazy in submitting work because there is no real consequence (eg final grade in unit) – incidence of this has increased with Smart Moves
- Choice is virtually gone with the increase in minimum requirements from 5 to 6
- Vertical/Flexible learning system

Smart Moves Review

Key Learning Area Focus Groups

Responses submitted after round of meetings held between
14th October and 1st September, 2002

RE:

- No real issues – concerns lie within department in regard to improving unit content and documentation.

Arts: No response submitted

English:

- Advice to students a concern – staff involved need to be better informed, need input from MC staff
- Problems with transition from VS to MC
- Need to develop pathways – combinations of units - to ensure necessary skills are covered
- Staff on both campuses need better knowledge of each others' programs so better advice is given regarding standard and skills being covered
- Staff prepare units in isolation – no one really vets them
- Benefits only potential at this point – not yet been seen
- Foundation/Standard/Advanced Levels not followed from VS to MC in English
- Change of teacher at semester is a disadvantage – time lost in 'orientation' so students not as prepared for VCE as they should be.
- English units need to be developed to cater all skills so students don't miss essential steps in learning sequence. This needs to be labour intensive – don't think we are prepared to put necessary time in.
- Nothing really different at Mt. Clear

LOTE: No response submitted

Maths:

- Year 7 Semester 2 (2002) – students have struggled with the change of groups so soon after their arrival into the school
- What are our goals for students entering year 7 – 'taste of all units' or core group teachers, minimum fragmentation – can we have both?? Need to establish priorities, then work on structure of Yr 7 units/program.

- Subject content time is seriously reduced by constant interruptions. Particularly so with doubles in maths – frequency of contact a problem. Makes it difficult to cover content which affects achievement - a concern for students wanting to access higher levels of Maths.
- Promotion of students to the next level with unsatisfactory completion of units – there are some students who need to repeat units.
- Planning in Maths is to improve practical content in Yr 9 & 10 standard groups – should be more motivating for students.

PE/Health: No response submitted

Science:

- Not enough exposure to certain areas (Chem/Physics) – implications for numbers in VCE
- Gaps in knowledge and skills due to ability for students to skip KLA for one or two consecutive semesters of Sci – implications for preparedness for VCE
- KLAs disadvantaged by early timing of unit selections for the next year – students may make selections based on very limited exposure to other units.
- Need to map out pathways to VCE units. Need a 7-10 and 7-12 vision.
- Thematic units seem successful at level 5/6
- Issue with the way forensic frenzy is offered – students choose it at expense of Chem/Physics option. Idea to move it to Sem 2 of ‘Year 9’
- Offer straight Chem/Physics/Biol units based around a theme in ‘Year 10’
- Offer more advanced units in Year 9 (like SC605) which has allowed more students to access to 11 Biol than in the past.
- Suggest that students should have to do all KLAs every semester, but they can choose which unit with each KLA.
- Arts/Technol argue for students experiencing all facets of their area in Year 7 – but same argument could apply to other KLAs like Science & SOSE

SOSE: No response submitted

Technology:

- Need an ‘open’ review of Smart Moves, surveys don’t ask the difficult questions, uncertainty that Smart Moves is working
- System not really vertical - Student choice is minimal & opportunity to advance to higher levels not ‘allowed’ for students who want to
- Movement of students through levels is a problem – no measure of when/how a student should progress to a higher level

- How do we keep records of student progress?
- Some students only reach level 4/5 in technology under present system (1Material, 1 IT, 1Systems) – no ability for staff to prepare the student to excel at VCE
- Availability of staff/facilities a concern

Other Responses from Key Staff Groups:

Library Staff:

Accessing resources an issue with semester long units – many class sets used in a semester but need storing for remainder of year.

Staffing the processing of class sets an issue – money/time
Money spent on class sets considerable given % of use in a year and shelf life.

Special Ed:

No response submitted.

Support Staff:

Science Lab Tech: Difficulty meeting prac equipment needs when there a multiple classes of a particular unit running at once. Problem has been discussed between staff with solution of staff communicating to ensure the same pracs are not needed at same time. In reality this appears to be difficult to achieve because it doesn't happen. In some instances when staff do communicate it seems workable but this isn't happening in the majority and is especially difficult for staff teaching a unit running on both campuses.

Appendix 4

Frequency Distributions for Background Demographics

Table A4.1

Number of Respondents by Gender

	GENDER							
	MISSING		FEMALE		MALE		Total	
	N	Row%	N	Row%	N	Row%	N	Row%
PARENT	16	15%	75	68%	19	17%	110	100%
STUDENT	0	0%	324	52%	294	48%	618	100%
TEACHER	6	8%	38	52%	29	40%	73	100%
TOTAL	22	3%	437	55%	342	43%	801	100%

Table A4.2

Age by Type of Respondent

	AGE									
	20-30		31-40		41-50		Over 50		Total	
	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%
PARENT	0	0%	26	24%	68	64%	13	12%	107	100%
TEACHER	6	8%	16	23%	25	35%	24	34%	71	100%
TOTAL	6	3%	42	24%	93	52%	37	21%	178	100%

Table A4.3

Attend Information Sessions by Type of Respondent

	ATTEND INFORMATION MEETING							
	Always		Never		Sometimes		Total	
	N	Row%	N	Row%	N	Row%	N	Row%
PARENT	55	50%	13	12%	41	38%	109	100%
STUDENT	109	18%	159	27%	322	55%	590	100%
TOTAL	164	23%	172	25%	363	52%	699	100%

Table A4.4

Teaching Experience of Staff Respondents

	YEARS TEACHING											
	0-5		6-10		11-15		16-20		OVER 21		Total	
	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%
TEACHER	9	13%	4	6%	14	21%	16	24%	24	36%	67	100%

Table A4.5

Number of Students by Gender and Year Level

	GENDER					
	FEMALE		MALE		TOTAL	
	N	ROW %	N	ROW %	N	ROW %
YEAR 8	99	55%	81	45%	180	100%
YEAR 9	81	53%	72	47%	153	100%
YEAR 10	82	47%	92	53%	174	100%
YEAR 11	62	56%	48	44%	110	100%
TOTAL	324	53%	293	47%	617	100%

Table A4.6

Student Commencement by Year Level

CURRENT YR LEVEL	COMMENCED											
	YEAR 7		YEAR 8		YEAR 9		YEAR 10		YEAR 11		Total	
	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%
YEAR 8	178	99%	1	1%	0	0%	0	0%	0	0%	179	100%
YEAR 9	142	93%	5	3%	6	4%	0	0%	0	0%	153	100%
YEAR 10	163	94%	1	1%	3	2%	6	3%	0	0%	173	100%
YEAR 11	95	89%	3	3%	1	1%	7	7%	1	1%	107	100%
TOTAL	578	94%	10	2%	10	2%	13	2%	1	0%	612	100%

Appendix 5

Descriptive Statistics for Background Demographics

Table A5.1

Descriptive Statistics Summary for Effect of Gender on Parent Responses in each Section of Questionnaire

	SECTION OF QUESTIONNAIRE		
	PHILOSOPHY	DELIVERY	TOTAL QUESTIONNAIRE
N	78	86	70
Missing	32	24	40
Mean	1.90	1.94	1.92
Std Dev	.46	.25	.30
Std Err	.05	.03	.04
Minimum	1.00	1.14	1.07
Maximum	3.50	2.57	2.68

Table A5.2

Descriptive Statistics Summary for Effect of Age on Parent Responses in each Section of Questionnaire

	SECTION OF QUESTIONNAIRE		
	PHILOSOPHY	DELIVERY	TOTAL QUESTIONNAIRE
N	88	100	81
Missing	22	10	29
Mean	1.87	1.91	1.89
Std Dev	.44	.26	.30
Std Err	.04	.03	.03
Minimum	1.00	1.00	1.07
Maximum	3.50	2.57	2.68

Table A5.3

Descriptive Statistics Summary for Effect of Age on Staff Responses in each Section of Questionnaire

	SECTION OF QUESTIONNAIRE		
	PHILOSOPHY	DELIVERY	TOTAL QUESTIONNAIRE
N	48	48	37
Missing	25	25	36
Mean	2.28	2.16	2.19
Std Dev	.51	.24	.31
Std Err	.07	.03	.05
Minimum	1.38	1.64	1.69
Maximum	3.61	2.80	2.80

Table A5.4

Descriptive Statistics Summary for Effect Years of Experience on Staff Responses in each Section of Questionnaire

	SECTION OF QUESTIONNAIRE		
	PHILOSOPHY	DELIVERY	TOTAL QUESTIONNAIRE
N	46	45	35
Missing	27	28	38
Mean	2.28	2.16	2.18
Std Dev	.52	.24	.32
Std Err	.07	.03	.05
Minimum	1.38	1.64	1.69
Maximum	3.61	2.80	2.80

Table A5.5

Descriptive Statistics Summary for Effect Year Level on Student Responses in each Section of Questionnaire

	SECTION OF QUESTIONNAIRE	
	PHILOSOPHY	DELIVERY
N	506	507
Missing	112	111
Mean	2.14	2.12
Std Dev	.40	.29
Std Err	.01	.01
Minimum	1.00	1.13
Maximum	3.33	3.61

Appendix 6

Homogeneity of Variance Tests

Table A6.1

Levene Tests for Homogeneity of Variance Summary for Parent by Effect of Gender and Age

EFFECT	SECTION OF QUESTIONNAIRE	LEVENE STATISTIC	df	2-TAIL SIG.
GENDER	PHILOSOPHY	.003	1,76	.956
	DELIVERY	3.366	1,84	.070
	TOTAL QUESTIONNAIRE	.961	1,68	.330
AGE	PHILOSOPHY	1.670	2,85	.194
	DELIVERY	.295	2,97	.745
	TOTAL QUESTIONNAIRE	1.412	2,78	.250

Table A6.2

Effect of Parent Attendance at Information Evenings
Multivariate and Univariate Tests for Homogeneity of Variance Summary**Multivariate Tests:**

Boxes M = 12.823

 $\underline{F} = .826;$ $\underline{X}^2 = 12.416;$

df = 15, 8784;

df = 15;

 $\underline{p} = .649$ $\underline{p} = .647$ **Univariate Tests:**

PHILOSOPHY SECTION

Cochran's $\underline{C} = .208;$ Bartlett-Box's $\underline{F} = .405;$

df = 85, 6;

df = 5, 32610;

 $\underline{P} = .251$ $\underline{P} = .845$

DELIVERY SECTION

Cochran's $\underline{C} = .239;$ Bartlett-Box's $\underline{F} = 1.486;$

df = 85, 6;

df = 5, 32610;

 $\underline{P} = .013$ $\underline{P} = .191$

Table A6.3

Effect of Staff Age and Gender
Multivariate and Univariate Tests for Homogeneity of Variance Summary

Multivariate Tests:

Boxes \underline{M} = 11.718

\underline{F} = .575;

\underline{X}^2 = 8.810;

df = 15, 968;

df = 15;

\underline{P} = .895

\underline{P} = .887

Univariate Tests:

PHILOSOPHY SECTION

Cochran's \underline{C} = .379;

Bartlett-Box's \underline{F} = 1.517;

df = 3, 8;

df = 7, 287;

\underline{P} = .133

\underline{P} = .433

DELIVERY SECTION

Cochran's \underline{C} = .272;

Bartlett-Box's \underline{F} = 1.517;

df = 3, 8;

df = 7, 287;

\underline{P} = .616

\underline{P} = .161

Table A6.4

Levene Tests for Homogeneity of Variance Summary for Staff Years of Experience

EFFECT	SECTION OF QUESTIONNAIRE	LEVENE STATISTIC	df	2-TAIL SIG.
YR EXPERIENCE	PHILOSOPHY	.799	4,41	.533
	DELIVERY	.905	4,40	.470
	TOTAL QUESTIONNAIRE	1.423	4,30	.250

Table A6.5

Effect of Student Year Level and Gender
Multivariate and Univariate Tests for Homogeneity of Variance Summary

Multivariate Tests:

Boxes \underline{M} = 41.09		
\underline{F} = 1.926;	df = 21, 443367;	\underline{P} = .007
\underline{X}^2 = 40.451;	df = 21;	\underline{P} = .007

Univariate Tests:

PHILOSOPHY SECTION

Cochran's \underline{C} = .177;	df = 54, 8;	\underline{P} = .134
Bartlett-Box's \underline{F} = 3.459;	df = 7, 171567;	\underline{P} = .001

DELIVERY SECTION

Cochran's \underline{C} = .178;	df = 54, 8;	\underline{P} = .119
Bartlett-Box's \underline{F} = 1.882;	df = 7, 171567;	\underline{P} = .068

Table A6.6

Effect of Student Year Level Began
Multivariate and Univariate Tests for Homogeneity of Variance Summary

Multivariate Tests:

Boxes \underline{M} = 10.881;		
\underline{F} = 1.034;	df = 9, 1553;	\underline{P} = .410
\underline{X}^2 = 9.374;	df = 9;	\underline{P} = .403

Univariate Tests:

PHILOSOPHY SECTION

Cochran's \underline{C} = .415;	df = 108, 4;	\underline{P} = .000
Bartlett-Box's \underline{F} = .908;	df = 3, 1225;	\underline{P} = .436

DELIVERY SECTION

Cochran's \underline{C} = .370;	df = 108, 4;	\underline{P} = .000
Bartlett-Box's \underline{F} = 1.385;	df = 3, 1225;	\underline{P} = .246

Table A6.7

Effect of Student Year Level
Levene Test for Homogeneity of Variance Summary

EFFECT	VARIABLE	LEVENE STATISTIC	df	2-TAIL SIG.
YR EXPERIENCE	PHILOSOPHY	.799	4,41	.533
	DELIVERY	.905	4,40	.470
	TOTAL QUESTIONNAIRE	1.423	4,30	.250

Table A6.8

Effect of Student Year Level on Total Questionnaire
Univariate Tests for Homogeneity of Variance Summary

Test	Result	df	p
Cochran's	$\underline{C} = .415;$	50, 8	.123
Bartlett-Box's	$\underline{F} = .908;$	7, 146591	.017

Table A6.9

Effect of Sufficient Choice
Levene Test for Homogeneity of Variance Summary

VARIABLE	LEVENE STATISTIC	df	2-TAIL SIG.
SUFFICIENT CHOICE	11.341	2,785	.000

Table A6.10

Effect of Choice Provided in Philosophy
Levene Test for Homogeneity of Variance Summary

VARIABLE	LEVENE STATISTIC	df	2-TAIL SIG.
PHILOSOPHY OF CHOICE	3.325	2,783	.036

A6.11

Effect of Information and Advice is Accessible and Appropriate
Levene Test for Homogeneity of Variance Summary

VARIABLE	LEVENE STATISTIC	df	2-TAIL SIG.
INFORMATION AND ADVICE IS ACCESSIBLE AND APPROPRIATE	5.261	2,789	.005

Appendix 7

Descriptive Statistics for Differences by Type of Respondent

Table A7.1

Effect of Type of Questionnaire
Multivariate and Univariate Tests for Homogeneity of Variance Summary

Multivariate Tests:

Boxes $\bar{M} = 4.463;$
 $\underline{F} = .732;$ df = 6, 78461; $\underline{P} = .632$
 $\underline{X}^2 = 4.398;$ df = 6; $\underline{P} = .632$

Univariate Tests:

PHILOSOPHY SECTION

Cochran's $\underline{C} = .378;$ df = 187, 3; $\underline{P} = .169$
 Bartlett-Box's $\underline{F} = .419;$ df = 2, 86984; $\underline{P} = .658$

DELIVERY SECTION

Cochran's $\underline{C} = .383;$ df = 187, 3; $\underline{P} = .119$
 Bartlett-Box's $\underline{F} = .931;$ df = 2, 86984; $\underline{P} = .394$

Table A7.2

Levene Tests for Homogeneity of Variance Summary for Total Questionnaire

EFFECT	LEVENE STATISTIC	df	2-TAIL SIG.
TYPE OF QUESTIONNAIRE	.524	2, 526	.592

Table A7.3

Descriptive Statistics Summary for Effect of Type of Questionnaire on the Total Questionnaire

N	529
Missing	272
Mean	2.13
Std Dev	.33
Std Err	.01
Minimum	1.07
Maximum	3.57

Appendix 8

Descriptive Statistics for Research Questions

Table A8.1

Spearman's Rank Order Correlation for Level of Choice on Student Motivation

Correlations

			PROVIDES LEVEL OF CHOICE	CHOICE PROMOTES MOTIVATION
Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.364**
		Sig. (2-tailed)	.	.000
		N	786	782
	CHOICE PROMOTES MOTIVATION	Correlation Coefficient	.364**	1.000
		Sig. (2-tailed)	.000	.
		N	782	795

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.2

Spearman's Rank Order Correlation for Level of Choice on Student Motivation
by Type of Respondent

Correlations

TYPE OF QUESTIONNAIRE				PROVIDES LEVEL OF CHOICE	CHOICE PROMOTES MOTIVATION
PARENT	Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.292**
			Sig. (2-tailed)	.	.002
			N	107	106
		CHOICE PROMOTES MOTIVATION	Correlation Coefficient	.292**	1.000
			Sig. (2-tailed)	.002	.
			N	106	109
STUDENT	Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.344**
			Sig. (2-tailed)	.	.000
			N	609	608
		CHOICE PROMOTES MOTIVATION	Correlation Coefficient	.344**	1.000
			Sig. (2-tailed)	.000	.
			N	608	616
TEACHER	Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.427**
			Sig. (2-tailed)	.	.000
			N	70	68
		CHOICE PROMOTES MOTIVATION	Correlation Coefficient	.427**	1.000
			Sig. (2-tailed)	.000	.
			N	68	70

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.3

Spearman's Rank Order Correlation for Level of Choice on Student Ownership of Learning Program

Correlations

			PROVIDES LEVEL OF CHOICE	FEELS OWNERSHIP
Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.335**
		Sig. (2-tailed)	.	.000
		N	786	776
	FEELS OWNERSHIP	Correlation Coefficient	.335**	1.000
		Sig. (2-tailed)	.000	.
		N	776	788

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.4

Spearman's Rank Order Correlation for Level of Choice on Student Ownership of Learning Program by Type of Respondent

Correlations

TYPE OF QUESTIONNAIRE				PROVIDES LEVEL OF CHOICE	FEELS OWNERSHIP
PARENT	Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.349**
			Sig. (2-tailed)	.	.000
			N	107	104
		FEELS OWNERSHIP	Correlation Coefficient	.349**	1.000
			Sig. (2-tailed)	.000	.
			N	104	107
STUDENT	Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.316**
			Sig. (2-tailed)	.	.000
			N	609	602
		FEELS OWNERSHIP	Correlation Coefficient	.316**	1.000
			Sig. (2-tailed)	.000	.
			N	602	610
TEACHER	Spearman's rho	PROVIDES LEVEL OF CHOICE	Correlation Coefficient	1.000	.413**
			Sig. (2-tailed)	.	.000
			N	70	70
		FEELS OWNERSHIP	Correlation Coefficient	.413**	1.000
			Sig. (2-tailed)	.000	.
			N	70	71

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.5

Spearman's Rank Order Correlation for Planning a Pathway on Long Term Planning Skills and Responsibility

Correlations

			A7. Mapping out your unit selections makes you feel responsible for your learning program.	A8. Mapping out your minimum requirements helps you to think about what you want to do in the future.
Spearman's rho	A7. Mapping out your unit selections makes you feel responsible for your learning program.	Correlation Coefficient	1.000	.459**
		Sig. (2-tailed)	.	.000
		N	796	791
	A8. Mapping out your minimum requirements helps you to think about what you want to do in the future.	Correlation Coefficient	.459**	1.000
		Sig. (2-tailed)	.000	.
		N	791	793

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.6

Spearman's Rank Order Correlation for Planning a Pathway on Long Term Planning Skills and Responsibility by Type of Respondent

Correlations				A7. Mapping out your unit selections makes you feel responsible for your learning program.	A8. Mapping out your minimum requirements helps you to think about what you want to do in the future.
TYPE OF QUESTIONNAIRE	Spearman's rho				
PARENT	Spearman's rho	A7. Mapping out your unit selections makes you feel responsible for your learning program.	Correlation Coefficient Sig. (2-tailed) N	1.000 . 110	.706** .000 109
		A8. Mapping out your minimum requirements helps you to think about what you want to do in the future.	Correlation Coefficient Sig. (2-tailed) N	.706** .000 109	1.000 . 109
STUDENT	Spearman's rho	A7. Mapping out your unit selections makes you feel responsible for your learning program.	Correlation Coefficient Sig. (2-tailed) N	1.000 . 614	.393** .000 610
		A8. Mapping out your minimum requirements helps you to think about what you want to do in the future.	Correlation Coefficient Sig. (2-tailed) N	.393** .000 610	1.000 . 612
TEACHER	Spearman's rho	A7. Mapping out your unit selections makes you feel responsible for your learning program.	Correlation Coefficient Sig. (2-tailed) N	1.000 . 72	.631** .000 72
		A8. Mapping out your minimum requirements helps you to think about what you want to do in the future.	Correlation Coefficient Sig. (2-tailed) N	.631** .000 72	1.000 . 72

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.7

Spearman's Rank Order Correlation for Discussions with Parents and Staff with Students Feeling Valued

Correlations			IMPROVE DISCUSSION	STUDENT FEEL VALUED
Spearman's rho	IMPROVE DISCUSSION	Correlation Coefficient Sig. (2-tailed) N	1.000 . 784	.343** .000 779
	STUDENT FEEL VALUED	Correlation Coefficient Sig. (2-tailed) N	.343** .000 779	1.000 . 794

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.8

Spearman's Rank Order Correlation for Discussions with Parents and Staff with Students Feeling Valued by Type of Respondent

Correlations				STUDENT FEEL VALUED	IMPROVE DISCUSSION
TYPE OF QUESTIONNAIRE					
PARENT	Spearman's rho	STUDENT FEEL VALUED	Correlation Coefficient	1.000	.419**
			Sig. (2-tailed)	.	.000
		N	110	109	
		IMPROVE DISCUSSION	Correlation Coefficient	.419**	1.000
			Sig. (2-tailed)	.000	.
			N	109	109
STUDENT	Spearman's rho	STUDENT FEEL VALUED	Correlation Coefficient	1.000	.298**
			Sig. (2-tailed)	.	.000
		N	613	605	
		IMPROVE DISCUSSION	Correlation Coefficient	.298**	1.000
			Sig. (2-tailed)	.000	.
			N	605	609
TEACHER	Spearman's rho	STUDENT FEEL VALUED	Correlation Coefficient	1.000	.228
			Sig. (2-tailed)	.	.068
		N	71	65	
		IMPROVE DISCUSSION	Correlation Coefficient	.228	1.000
			Sig. (2-tailed)	.068	.
			N	65	66

** . Correlation is significant at the 0.01 level (2-tailed).

Table A8.9

Descriptive Statistics Summary for Sufficient Choice by Type of Respondent

	TYPE OF RESPONDENT		
	PARENT	STUDENT	STAFF
N	106	611	71
Missing	4	7	2
Mean	2.18	2.69	2.94
Std Dev	.69	.82	.88
Std Err	.07	.03	.11
Minimum	1	1	2
Maximum	5	5	5

Table A8.10

Descriptive Statistics Summary for Choice Provided in Philosophy by Type of Respondent

	TYPE OF RESPONDENT		
	PARENT	STUDENT	STAFF
N	107	609	70
Missing	3	9	3
Mean	1.91	2.11	2.44
Std Dev	.57	.63	.69
Std Err	.06	.03	.08
Minimum	1	1	1
Maximum	4	5	4

Table A8.11

Descriptive Statistics Summary for Information and Advice is Accessible and Appropriate by Type of Respondent

	TYPE OF RESPONDENT		
	PARENT	STUDENT	STAFF
N	107	614	71
Missing	3	4	2
Mean	2.38	3.08	2.77
Std Dev	.82	.88	1.05
Std Err	.08	.04	.13
Minimum	1	1	1
Maximum	5	5	5

Appendix 9

Definition of Variables and Subscales

Table A9.1

Subscales for Philosophies behind Program Section of Questionnaires.

Code	Description	Questions		
		Student	Staff	Parent
PLC	Provides level of choice	2 3 4	2 3 4	2 3 4
CPM	Choice promotes motivation	5 6 15	5 6 15	5 6
FOP	Feel ownership of program	9 10	9 10	9 10
ARL	Access across KLAs at right level	1	1	1
IDI	Improve relationships through discussion re interests	13 14	13 14	13 14
SFV	Student feel more valued	11	11	11
SM	SM is a better way of delivering the curriculum.	12	12	12

Table A9.2

Subscales for Delivery of Program Section of Questionnaires.

Code	Description	Questions Used		
		Student	Staff	Parent
SC	Sufficient Choice	1 2	1 2	1 2
NEC	Not enough Choice	3	3	3
ARL	Access is at right level	4	4	4
SBF	Selections based on friends	9	9	9
IAA	Sufficient Info and Advice Available	5,6,7,8	5,6,7,8	5,6,7,8

Table A9.3

Questions and Subscales that Define the Variables Used to Answer the Research Questions

Research Question	Questions/Subscales Applied
1a	All questions from philosophy section and all questions from delivery section of each questionnaire and tested against each background demographic.
1b	All questions from philosophy section and all questions from delivery section of each questionnaire.
2	Subscale PLC and CPM
3	Subscale PLC and FOP
4	Subscale ARL
5	Question 7 and Question 8 from the Philosophy Section of each Questionnaire
6	Subscales IDI and SFV
7a	Subscale SC, NEC and Question 3 from Section B of each Questionnaire
7b	Subscale SBF
7c	Subscale IAA
7d	Subscale SM