

**DECISIONS BY 'SCIENCE PROFICIENT' YEAR 10  
STUDENTS ABOUT POST-COMPULSORY  
HIGH SCHOOL SCIENCE ENROLMENT:  
A SOCIOCULTURAL EXPLORATION**

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## **CERTIFICATE OF ORIGINALITY**

I certify that I am the sole author of this thesis, and that the substance of the thesis has not previously been submitted for any degree and is not currently being submitted for any other degrees.

I certify that, to the best of my knowledge, any help received in preparing this thesis, and all sources used, have been acknowledged in this thesis.



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## ABSTRACT

Motivated by chronic declines in post-compulsory high school science participation, this research provides a new perspective on the enrolment decisions of science proficient Year 10 students in New South Wales (NSW). The study adapted the 'multiple worlds' model of Phelan, Davidson and Cao (1991) to explore students' perceptions of their family, peer, school science and mass media worlds, for influences on their decisions about enrolling in post-compulsory science courses. A survey of 196 science proficient students, in six schools, provided a context for interviews with 37 students deciding for, or against, taking further science. The study considered influences within each world, and the effects of congruency or incongruency between cultural features of different worlds. The opinions of 24 science teachers regarding the enrolment decisions of science proficient students provided a triangulation of perspectives.

The study found science proficient students often cross referenced perceptions of the attitudes and values within family and school science worlds when deciding whether to take science courses. In particular, the resources of cultural and social capital within students' families were strongly influential in many decisions, since experiences of school science alone did not tend to encourage further participation, particularly in the physical sciences. Teachers' opinions that science proficient students were being drawn away from science courses and careers by external influences were not supported by students' narratives.

The study produced three models illustrating the influences and processes often leading to different enrolment decisions. With regard to falling enrolments, the study recommends that the science curriculum emphasise the personal and social relevance of science, since extrinsic imperatives for taking science, such as university prerequisites, are no longer sufficiently influential. The study also recommends that greater discussion of science careers be undertaken in Year 10, helping science proficient students develop an awareness of the variety and value of science careers, and providing alternative images of scientists to those perceived through the mass media.

## TABLE OF CONTENTS

	Page
LIST OF FIGURES	vii
LIST OF TABLES	viii
LIST OF APPENDICES	viii
ACRONYMS	ix
<b>CHAPTER ONE: AN OVERVIEW OF THE STUDY</b>	<b>1</b>
INTRODUCTION	1
THE CONTEXT OF SENIOR SCIENCE ENROLMENT IN NSW SCHOOLS	2
THE FOCUS OF THE STUDY	3
Thematic Research Questions	5
Overview of the Research Design	5
THE SIGNIFICANCE OF THE STUDY	5
THE RESEARCH BOUNDARIES	6
Delimitations	6
Limitations	7
THE STRUCTURE OF THE THESIS	8
<b>CHAPTER TWO: HIGH SCHOOL SCIENCE ENROLMENT DECISIONS: FRAMEWORKS FOR EXPLORATION</b>	<b>10</b>
INTRODUCTION	10
HIGH SCHOOL SCIENCE ENROLMENTS TRENDS	11
High School Science Concerns in New South Wales	12
Implications for the Future	13
INFLUENCES ON STUDENTS' SCIENCE ENROLMENT DECISIONS	15
Students' Explanations for Choosing Science Courses	16
Gaining Advice on Subject Options	18
Teachers' Perceptions of Science Enrolment Decisions	19
Background Influences on Science Enrolment Decisions	20
Developing the Conceptual Framework	26
THE OPPORTUNITY FOR A NEW APPROACH	27
Students' Sociocultural Domains	29
Conceptions of, and Responses to Science	38
Constructing Personal Conceptions of Science	39
SUMMARY	41
DEVELOPING THE RESEARCH QUESTIONS	42

<b>CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY</b>	<b>44</b>
INTRODUCTION	44
DETERMINING AN APPROPRIATE RESEARCH METHODOLOGY	44
FIRST PRELIMINARY STUDY: THE STUDENT PROFILE	
QUESTIONNAIRE (SPQ)	47
Selection and Sampling	47
Designing the SPQ	49
Piloting and Evaluating the SPQ	51
Collecting and Analysing the SPQ Data	52
SECOND PRELIMINARY STUDY: THE SCIENCE TEACHER	
SURVEY (STS)	56
Selecting the Science Teachers	56
Designing the STS	56
Evaluating the STS	57
Collecting and Analysing the STS Data	57
THE PRINCIPAL STUDY: INTERVIEWS	57
Selection and Sampling	58
Designing the Interview Schedule	59
Piloting and Evaluating the Interview Schedule	61
Collecting and Analysing the Interview Data	62
ISSUES OF RESEARCH INTEGRITY	66
Ethics of Data Collection and Reporting	66
Establishing the Trustworthiness of the Findings	67
SUMMARY	72
<b>CHAPTER FOUR: MAPPING THE TOPOGRAPHY OF</b>	
<b>SCIENCE SUBJECT CHOICE</b>	<b>73</b>
INTRODUCTION	73
ENROLMENT PATTERNS AMONG SCIENCE PROFICIENT	
STUDENTS	73
Gender Differences in Enrolment Decisions	73
Geographical Location and Enrolment Decisions	75
Ethnic Background and Enrolment Decisions	75
INFLUENTIAL SOURCES OF ADVICE	76
THE OPINIONS OF SCIENCE TEACHERS	77
Profile of the STS Respondents	77
Teachers' Perceptions of Science Enrolment Trends	77
Teachers' Views about Influences on Enrolment Decisions	77
STUDENTS' EXPLANATIONS FOR THEIR SCIENCE	
ENROLMENT DECISIONS	82
Students' Explanations for Choosing Physical Science Subjects	83
Students' Explanations for Choosing Biology/Other Science Subjects	86
Students' Explanations for Choosing No Science Subjects	87

COMPARISONS BETWEEN STUDENTS' EXPLANATIONS AND SCIENCE TEACHERS' OPINIONS	90
Career Considerations	90
Experiences of School Science	94
Structural Impediments to Choosing Science Subjects	95
SUMMARY	96
<b>CHAPTER FIVE: EXPLORING THE SCHOOL SCIENCE WORLDS OF SCIENCE PROFICIENT STUDENTS</b>	<b>97</b>
INTRODUCTION	97
THE STRUCTURAL DIMENSION OF STUDENTS' SCHOOL SCIENCE WORLDS	97
University Prerequisite Subjects	98
School Timetable Frameworks	98
THE ATTITUDINAL DIMENSION OF STUDENTS' SCHOOL SCIENCE WORLDS	99
The Content-Centredness of School Science	99
Decontextualised Curriculum Content	100
The Relative Difficulty of Different Science Courses	102
The Strategic Value of Physical Science Courses	104
THE DYNAMICS OF STUDENTS' SCHOOL SCIENCE WORLDS	106
Teaching Dynamics	106
Learning Dynamics	109
SUMMARY	110
<b>CHAPTER SIX: EXPLORING THE PEER AND MASS MEDIA WORLDS OF SCIENCE PROFICIENT STUDENTS</b>	<b>112</b>
EXPLORING STUDENTS' PEER WORLDS	112
Introduction	112
Students Choosing Physical Science Subjects	113
Students Choosing Biology/Other Science Subjects	117
Students Choosing No Science Subjects	118
Implications for the Multiple Worlds Model	119
Summary	120
EXPLORING STUDENTS' MASS MEDIA WORLDS	121
Introduction	121
The Structural Dimension of Students' Mass Media Worlds	121
The Dynamics of Students' Mass Media Worlds	123
The Attitudinal Dimension of Students' Mass Media Worlds	124
Implications for the Multiple Worlds Model	132
Summary	132

<b>CHAPTER SEVEN: EXPLORING THE FAMILY WORLDS OF SCIENCE PROFICIENT STUDENTS</b>	<b>134</b>
INTRODUCTION	134
FINDINGS FROM THE SPQ	134
THE STRUCTURAL DIMENSION OF STUDENTS' FAMILY WORLDS	136
Parental Occupations	136
Parenting Structures	138
THE ATTITUDINAL DIMENSION OF STUDENTS' FAMILY WORLDS	138
Perceptions of Parental Attitudes to Formal Education	139
Perceptions of Attitudes to Science within the Family	148
Cultural Values and Practices of NESB Families	158
THE DYNAMICS OF STUDENTS' FAMILY WORLDS	163
Students' Relationships with their Fathers	163
Students' Relationships with their Mothers	170
Students' Relationships with Other Family Members	172
THE INTERACTION OF INFLUENCES WITHIN FAMILY WORLDS	173
IMPLICATIONS FOR THE MULTIPLE WORLDS MODEL	179
Congruence and the Strategic Value of Physical Science Subjects	179
Congruence and the Content-Centredness of School Science	182
Congruence and the Relative Difficulty of Science Subjects	185
SUMMARY	187
<b>CHAPTER EIGHT: CONCLUSIONS AND IMPLICATIONS</b>	<b>190</b>
MAJOR FINDINGS	190
Question 1a	190
Question 1b	191
Conclusions Regarding the First Thematic Research Question	191
Question 2a	194
Question 2b	194
Conclusions Regarding the Second Thematic Research Question	195
THEORETICAL IMPLICATIONS	195
Implications for the Multiple Worlds Model	195
Implications for the Conceptual Framework	200
IMPLICATIONS FOR POLICY AND PRACTICE	202
FURTHER RESEARCH	205
<b>REFERENCES</b>	<b>208</b>
<b>APPENDICES</b>	<b>235</b>



## LIST OF FIGURES

Figure 2.1	Australian Year 12 enrolments in the main public examination science subjects since 1980.	11
Figure 2.2	The foundation for an evolving conceptual framework	16
Figure 2.3	The conceptual framework	27
Figure 2.4	The Multiple Worlds model of Phelan, Davidson & Cao (1991)	29
Figure 2.5	A new model of students' Multiple Worlds	37
Figure 2.6	The social construction of students' conceptions of science	39
Figure 3.1	An overview of the methodology	45
Figure 3.2	Schools involved in the study	48
Figure 3.3	Analysis of the SPQ data	54
Figure 3.4	The relationship between the Interview Schedule items and the Multiple Worlds model	59
Figure 3.5	The analytical process	64
Figure 3.6	Permission flow chart	67
Figure 4.1	Gender of the SPQ population by science enrolment decision	74
Figure 4.2	Percentages of SPQ students of different grades and gender choosing senior courses	74
Figure 4.3	SPQ self-rating of academic science ability, by male and female physical science students	85
Figure 4.4	SPQ students taking so called 'soft option' courses	94
Figure 6.1	SPQ ratings for 'Reliance on Advice of Best Friend', by students in three choice categories	116
Figure 6.2	SPQ ratings for 'Reliance on the Advice of Senior students', by physical science students	116
Figure 7.1	SPQ ratings for 'Reliance on the Advice of Fathers', by female students in three choice categories	135
Figure 7.2	SPQ ratings for 'Reliance on the Advice of Mothers', by physical science students	135
Figure 7.3	The three characteristics of family worlds found to have influenced the science enrolment decisions of many science proficient students	174
Figure 7.4	The interaction of three characteristics of students' family worlds which were found to influence their science enrolment decisions	175
Figure 8.1	Summary of the characteristics of the four worlds which were negotiated by some science proficient students in their deliberations about enrolling in senior science courses	192

Figure 8.2	A model illustrating the congruence between characteristics of family and school science worlds found among science proficient students choosing physical science subjects	196
Figure 8.3	A model illustrating congruence and incongruence between characteristics of family and school science worlds found among science proficient students choosing biology/other science subjects	198
Figure 8.4	A model illustrating congruence and incongruence between characteristics of family and school science worlds found among science proficient students choosing no science subjects	199
Figure 8.5	The conceptual framework, modified in the light of major findings from this study.	201

### TABLES

Table 3.1	Overview of the SPQ population	52
Table 3.2	Choice categories of the SPQ population	53
Table 4.1	Students' ratings of their reliance on the advice of others	76
Table 4.2	Career preferences of science proficient students choosing not to enrol in senior science subjects	93

### APPENDICES

APPENDIX A	1998 School Certificate Course Performance Descriptors	236
APPENDIX B	Patterns in Australian Senior High School Science Enrolments	237
APPENDIX C	Student Profile Questionnaire (SPQ) and consent forms	239
APPENDIX D	Science Teacher Survey (STS) and consent forms	246
APPENDIX E	Profiles of the STS respondents	251
APPENDIX F	Profiles of the interview respondents	252
APPENDIX G	Interview schedule and consent forms	254
APPENDIX H	Abridged version of the NUD*IST index tree	262
APPENDIX I	Permission to conduct research	265
APPENDIX J	SPSS contingency tables and significance levels	269
APPENDIX K	Summary of students' explanations for their decisions	274
APPENDIX L	Classification of parents' occupations	278

## ACRONYMS

AAS	Australian Academy of Science
ACDS	Australian Council of Deans of Science
AIS	Association of Independent Schools
ASTEC	Australian Science and Technology Council
AVCC	Australian Vice Chancellors Committee
BoS	Board of Studies (NSW)
CEC	Catholic Education Commission (National)
CEO	Catholic Education Office
DET	Department of Education and Training (NSW)
DETYA	Department of Education, Training and Youth Affairs (National)
ESB	English Speaking Background
HSC	Higher School Certificate
IT	Information Technology
KLA	Key Learning Area
NBEET	National Board of Employment, Education and Training
NESB	Non-English Speaking Background
NSW	New South Wales
NUD*IST	Non-numerical Unstructured Data Indexing, Searching and Theorising
PD/H/PE	Personal Development, Health and Physical Education
SC	Science Coordinator
SPQ	Student Profile Questionnaire
SSB	Secondary Schools Board (NSW)
STS	Science Teacher Survey
SISS	Second International Science Study
TIMSS	Third International Maths and Science Study
UAI	University Admissions Index
UAC	University Admissions Centre