

**A LONGITUDINAL EVALUATION OF A THEORETICALLY  
DERIVED ADOLESCENT CAREER EDUCATION  
INTERVENTION**

Lee-Ann Prideaux, BEd., BPsych(Hons)

Submitted in fulfilment of the requirements for the Degree of  
Doctor of Philosophy within the School of Applied Psychology,  
Griffith University, Faculty of Commerce and Management,  
Gold Coast Campus

7 January, 2003

## ABSTRACT

Theoretically derived career education programs are not well documented in the career development literature. This remains so, despite growing recognition of the negative effects of a schism between theory and practice. This thesis describes a research project that attempted to incorporate theory into practice. The two primary aims were to test and extend career development theory, and to evaluate a theoretically derived career education program. The participants were 296 Year 10 students (mean age = 14.5 years; 147 females & 149 males) attending a government high school in a low socio-economic area of a large Australian city. Career maturity, career decision-making self-efficacy, and career indecision were the key career development variables examined. Students' decision coping patterns were also investigated.

There were three studies in all. The first gathered qualitative data from a stratified random sample ( $N = 30$ ) of staff and parents at the school where the research took place. This study assessed the career decision-making development needs of the students. It also provided context specific information about the opportunity structure of these adolescents, including perceived barriers to making sound career-related decisions. Findings centred upon the belief that students lacked self confidence and were in need of training in life skills generally, and decision-making and goal setting skills in particular. The interviewees also painted a grim picture about students' complacency and sense of resignation to unemployment.

The second study involved the cross-sectional examination of baseline survey data, which obtained measures of the career development variables under investigation as well as relevant demographic and contextual data including part-time work experience, school achievement level, and parents' education and employment status. A thorough review of the career development literature, combined with the qualitative data, and the findings of this cross-sectional study, served to guide the design of a career education intervention. Social cognitive career theory's choice model (Lent, Brown, & Hackett, 1994) was used as the framework for the career education intervention, which ran for six weeks with one 70 minute lesson per week. Relationships amongst the key variables established previously in the literature were reflected in the results of the cross-sectional study. Demographic and contextual variables were also found to impact upon students' level of career development and decision-making behaviour in anticipated ways.

The third study was a longitudinal assessment of the intervention using the baseline survey and three more surveys administered during the same school year. The short and long term effects of the intervention were examined according to mode of delivery, and comparisons were made with controls. The researcher was the career development “expert” facilitator for the implementation of the intervention to 134 students between the first and second testing times. A wait-listed control group of 118 students undertook the intervention between the second and third testing times with regular classroom teachers facilitating it. The remaining students were enrolled in a generic school-based vocational course and were not given the intervention. There was a lapse of eight weeks between each of the first three testing times with the fourth test taken 12 weeks later.

Despite its brief nature, the intervention was found to assist students’ career development in a variety of ways. It led to gains in career maturity for females regardless of who taught them. However, males’ career maturity was enhanced only if teachers facilitated the intervention. Levels of career indecision and maladaptive decision-making coping patterns were also reduced by the intervention with teacher facilitation. A matched sample of students who did the intervention exhibited significantly better outcomes than those doing the generic vocational course. The long term impact of the intervention was found to be generally beneficial, although some gains were not maintained 12 weeks later. Students’ career decision-making self-efficacy and their resoluteness toward decision-making were not affected by the intervention.

The research findings led to an appeal for the realignment of focus in career education. This has implications for career education curriculum development in Australia, which needs to shift from its ad hoc, information giving approach, to more comprehensive, long-term, and intensive programming. Career education that enhances the personal skills students need to meet the demands of the world of work in the twenty-first century is required. Career process skills are of paramount importance. Specialist training for career guidance officers is also recommended and more research incorporating theory and practice is advocated.

## TABLE OF CONTENTS

|  |            |
|--|------------|
| <b>LIST OF TABLES</b> .....  | <b>ix</b>  |
| <b>LIST OF FIGURES</b> .....   | <b>XI</b>  |
| <b>LIST OF APPENDICES</b> .....  | <b>XII</b> |
| <br>   |            |
| <b>CHAPTER 1: INTRODUCTION</b> .....   | <b>1</b>   |
| Overview .....   | 1          |
| Rationale .....  | 2          |
| Research Program Outline .....   | 3          |
| <i>Summary Information on Studies 1-3 Reported in this Thesis</i> .....      | 5          |
| Significance of the Research Project .....                                   | 7          |
| Limitations of the Research Project .....                                    | 8          |
| Research Questions .....   | 11         |
| <br>   |            |
| <b>CHAPTER 2: LITERATURE REVIEW</b> .....                                    | <b>12</b>  |
| Career Development Theory .....  | 12         |
| Introduction .....   | 12         |
| Clarification of Career Theory Terminology .....                             | 14         |
| Career Development Theory: Content and Process .....                         | 16         |
| Content Based Career Theory .....  | 16         |
| Holland’s Theory of Vocational Choice .....                                  | 16         |
| Process Based Career Theory .....  | 18         |
| Super’s Life Span, Life Space Theory of Career Development.....              | 18         |
| Integration of Career Theory .....   | 21         |
| Social Cognitive Career Theory.....  | 24         |
| <i>Social Learning Theory</i> .....  | 25         |
| Concepts and Assumptions .....   | 27         |
| Key Constructs .....   | 29         |
| Models .....   | 31         |
| <i>Interest Model</i> .....  | 31         |
| <i>Choice Model</i> .....  | 32         |
| <i>Performance Model</i> .....   | 33         |
| <i>Empirical Support for the Social Cognitive Career Theory Models</i> ..... | 34         |
| <i>Empirical Support for Career Self-Efficacy</i> .....                      | 35         |
| Summary .....  | 38         |
| Career Development Research in Australia and New Zealand .....               | 39         |
| Career Education Policy and Practice .....                                   | 41         |
| Current Context .....  | 41         |
| Development in Career Education Practice.....                                | 43         |
| Career Education Policy .....  | 44         |
| <i>The Impact of the Discourse on Career Education Requirements</i> .....    | 45         |
| Summary .....  | 47         |
| Career Education Intervention Evaluations .....                              | 47         |
| <i>Summary of Career Intervention Studies</i> .....                          | 49         |

|   |               |
|---|---------------|
| <b>CHAPTER 3: REVIEW OF CONSTRUCTS .....</b>  | <b>52</b>     |
| Key Career Development Variables .....  | 52            |
| Introduction .....  | 52            |
| Career Maturity .....   | 53            |
| Career Decision-making Self-efficacy .....  | 55            |
| Career Indecision.....  | 57            |
| Summary .....   | 60            |
| Adolescent Decision Coping Behaviours.....  | 62            |
| <i>Pearson Product-Moment correlations between the five subscales of the FADMQ .....</i>      | <i>64</i>     |
| <i>Exploratory Factor Analysis of the FADMQ.....</i>  | <i>65</i>     |
| <i>Principal axis factor estimates of oblique factor loadings for the FADMQ; N = 296.....</i> | <i>66</i>     |
| <i>Confirmatory Factor Analysis of the FADMQ.....</i>   | <i>66</i>     |
| <br><b>CHAPTER 4: STUDY 1 .....</b>   | <br><b>68</b> |
| Qualitative Study .....   | 68            |
| Method .....  | 69            |
| Design .....  | 69            |
| Participants.....   | 70            |
| Procedure.....  | 70            |
| Results.....  | 73            |
| Programs .....  | 73            |
| <i>Overview of Themes Generated by Question 1.....</i>  | <i>73</i>     |
| <i>Didactic Programs.....</i>   | <i>74</i>     |
| <i>Informal Input.....</i>  | <i>75</i>     |
| <i>Summary.....</i>   | <i>76</i>     |
| Training Needs .....  | 76            |
| <i>Overview of Themes Generated by Question 2 .....</i>                                       | <i>77</i>     |
| <i>Personal Development.....</i>  | <i>77</i>     |
| <i>World of Work Knowledge.....</i>   | <i>78</i>     |
| <i>Sense of Reality.....</i>  | <i>79</i>     |
| <i>Skill Development.....</i>   | <i>80</i>     |
| <i>Early Intervention.....</i>  | <i>80</i>     |
| <i>Summary.....</i>   | <i>81</i>     |
| Barriers .....  | 81            |
| <i>Overview of Themes Generated by Question 3.....</i>  | <i>82</i>     |
| <i>Background.....</i>  | <i>82</i>     |
| <i>Barriers within the Individual .....</i>   | <i>84</i>     |
| <i>Knowledge Base .....</i>   | <i>85</i>     |
| <i>Summary.....</i>   | <i>85</i>     |
| Confidence .....  | 86            |
| <i>Overview of Themes Generated by Question 4 .....</i>                                       | <i>86</i>     |
| <i>Level of Confidence .....</i>  | <i>86</i>     |
| <i>Characteristics Affecting Confidence.....</i>  | <i>87</i>     |
| <i>Summary.....</i>   | <i>87</i>     |
| Aspirations .....   | 88            |
| <i>Overview of Themes Generated by Question 5.....</i>  | <i>88</i>     |
| <i>General Comments .....</i>   | <i>88</i>     |
| <i>Specific Aspirations .....</i>   | <i>89</i>     |

|  |            |
|--|------------|
| <i>Summary</i> .....   | 90         |
| Addendum .....   | 91         |
| <i>Overview of Themes Generated by Question 6</i> .....  | 91         |
| <i>Circumstances</i> .....   | 91         |
| <i>Personal Development</i> .....  | 92         |
| <i>Summary</i> .....   | 93         |
| Recurrent Themes .....   | 93         |
| <i>Recurrent Themes Generated Across Questions 1-6</i> .....   | 94         |
| <i>Self-Confidence</i> .....   | 94         |
| <i>Life/Social Skills</i> .....  | 95         |
| <i>Decision Making Skills</i> .....  | 95         |
| <i>Unemployment</i> .....  | 96         |
| Discussion .....   | 96         |
| Implications for Intervention Design .....   | 102        |
| <b>CHAPTER 5: STUDY 2</b> .....  | <b>105</b> |
| Cross-Sectional Study .....  | 105        |
| Research Questions and Hypotheses .....  | 106        |
| Method .....   | 108        |
| Design .....   | 108        |
| Participants .....   | 109        |
| <i>Demographic Variables for Total Sample used for the Cross-Sectional Study</i> .....                 | 110        |
| Procedure .....  | 110        |
| Instruments .....  | 112        |
| <i>Career Maturity Inventory – Revised</i> .....   | 112        |
| <i>Career Decision-Making Self-Efficacy Scale-Short Form</i> .....                                     | 113        |
| <i>Career Decision Scale</i> .....   | 114        |
| <i>Flinders Adolescent Decision-Making Questionnaire</i> .....   | 115        |
| <i>Certainty of Future Plans</i> .....   | 116        |
| <i>Gender</i> .....  | 116        |
| <i>Work Experience</i> .....   | 116        |
| <i>School Achievement Level</i> .....  | 117        |
| <i>Parents' Education</i> .....  | 117        |
| <i>Parents' Employment Status</i> .....  | 117        |
| <i>Performance Goals</i> .....   | 118        |
| Results .....  | 118        |
| <i>Summary Statistics for the Seven Dependent Variables</i> .....                                      | 118        |
| <i>Intercorrelations amongst the Continuous Variables</i> .....  | 119        |
| <i>Pearson Product-Moment Correlations, 2-tail Significance, using Time 1 Data</i> .....               | 119        |
| <i>The Effect of the Demographic/Contextual Variables</i> .....  | 120        |
| <i>Summary Statistics for the Seven Dependent Variables and Gender</i> .....                           | 120        |
| <i>Summary Statistics for the Seven Dependent Variables and Work Experience</i> .....                  | 121        |
| <i>Summary Statistics for the Seven Dependent Variables and Achievement Level</i> .....                | 122        |
| <i>Summary Statistics for the Seven Dependent Variables and Performance Goals</i> .....                | 123        |
| <i>Summary Statistics for the Seven Dependent Variables and Mothers' Education Level</i> .....         | 124        |
| <i>Summary Statistics for the Seven Dependent Variables and Fathers' Education Level</i> .....         | 124        |
| <i>Summary Statistics for the Seven Dependent Variables and Parents' Employment Status</i> .....       | 125        |
| <i>Prediction of Career Maturity, Career Decision-Making Self-Efficacy and Career Indecision</i> ..... | 125        |

|   |            |
|---|------------|
| <i>Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Maturity (N = 289)</i> .....                      | 126        |
| <i>Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Decision-Making Self-Efficacy (N = 264)</i> ..... | 127        |
| <i>Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Indecision (N = 294)</i> .....                    | 129        |
| Discussion .....  | 129        |
| <i>Interrelationships amongst the Career Development Measures</i> .....   | 130        |
| <i>Interrelationships amongst the Career Development Variables and the Demographic/ Contextual Variables</i> .....                        | 133        |
| <i>Explanation of Variance in Career Maturity, Career Decision-Making Self-Efficacy and Career Indecision</i> .....                       | 138        |
| <i>Implications for Intervention Design</i> .....   | 140        |
| <b>CHAPTER 6</b> .....  | <b>145</b> |
| Intervention: The Career Choice Cycle Course .....  | 145        |
| Prominent Background Issues .....   | 145        |
| <i>Main Issues Generated by the Literature Review, Study 1 and Study 2</i> .....  | 146        |
| <i>Guiding Principles</i> .....   | 147        |
| <i>Personal Attributes to be Promoted</i> .....   | 147        |
| <i>Elements Requiring Increased Awareness</i> .....   | 148        |
| <i>Specific Skills or Training Required</i> .....   | 149        |
| Precursor to the Career Choice Cycle Course .....   | 150        |
| Implementation of the Career Choice Cycle Course .....  | 152        |
| Program Content .....   | 153        |
| Pedagogical Features of the Career Choice Cycle Course .....  | 156        |
| Concluding Comments .....   | 157        |
| <b>CHAPTER 7: STUDY 3</b> .....   | <b>158</b> |
| Longitudinal Study.....   | 158        |
| Research Questions and Hypotheses.....  | 160        |
| Method .....  | 162        |
| Design .....  | 162        |
| <i>Study 3 Design of Testing Times, Groups and Intervention Schedule</i> .....  | 162        |
| Participants.....   | 163        |
| <i>Demographic Information at Time 1 for the Expert and Teacher Groups</i> .....  | 164        |
| Participant Attrition.....  | 165        |
| Procedure.....  | 167        |
| Instruments .....   | 167        |
| Results.....  | 168        |
| <i>Data File Configuration for Study 3</i> .....  | 169        |
| <i>Section One: Outcomes for Expert and Teacher Groups Combined</i> .....   | 170        |
| <i>Gender Summary Statistics for the Five Dependent Variables for Groups 1 and 2 Combined</i> .....                                       | 171        |
| <i>Section Two: Comparison between Expert versus Teacher Delivery of Intervention</i> ....  | 173        |
| <i>Section Three: Comparison between Expert Group and Controls</i> .....  | 178        |
| <i>Section Four: Comparison between Teacher Group and Controls</i> .....  | 182        |
| <i>Section Five: Theory Based Intervention versus School Based Career Education</i> .....   | 186        |
| <i>Demographic Information at Time 1 for the Teacher and Generic Groups</i> .....   | 188        |
| <i>Section Six: Long Term Effects of the Intervention with “Expert” Facilitator</i> .....   | 192        |

|  |            |
|--|------------|
| <i>Section Seven: Long Term Effects of the Intervention with Teachers as Facilitators ....</i>             | 196        |
| <i>Summary Statistics for the Five Dependent Variables for Males and Females in the Teacher group.....</i> | 197        |
| <i>Section Eight: Supplementary Evaluative Data.....</i>   | 200        |
| <i>Facilitators' Reflexive Accounts and General Feedback.....</i>  | 200        |
| <i>Pro Formas Submitted by Guidance Personnel.....</i>   | 203        |
| <i>Student Feedback via Course Evaluation Sheets.....</i>  | 204        |
| <i>Summary Statistics for Student Evaluation Sheets .....</i>  | 205        |
| Discussion .....   | 206        |
| Short Term Outcomes .....  | 206        |
| <i>Short Term Outcomes Compared to Controls .....</i>  | 210        |
| <i>Short Term Outcomes Compared to Generic Career Education.....</i>                                       | 211        |
| Long Term Outcomes.....  | 213        |
| Auxiliary Findings.....  | 216        |
| <b>CHAPTER 8: CONCLUSION.....</b>  | <b>218</b> |
| Overview .....   | 218        |
| Aims of the Research Project.....  | 218        |
| Overall Conclusions and Implications .....   | 220        |
| <i>Process Skills.....</i>   | 220        |
| <i>Realignment of Focus for Career Education.....</i>  | 221        |
| <i>Career Counsellor Specialists .....</i>   | 222        |
| <i>Specific Implications.....</i>  | 223        |
| Recommendations for Future Research .....  | 225        |
| Limitations .....  | 228        |
| <i>Limitations of Applied Research.....</i>  | 229        |
| <i>Reflections on Evaluation.....</i>  | 231        |
| <i>Reflections on Program Development.....</i>   | 233        |
| Conclusion.....  | 234        |
| <b>REFERENCES.....</b>   | <b>235</b> |

## LIST OF TABLES

|            |   |     |
|------------|---|-----|
| Table 1.1  | Summary Information on Studies 1-3 Reported in this Thesis .....                          | 5   |
| Table 2.1  | Summary of Career Intervention Studies .....  | 49  |
| Table 3.1  | Pearson Product-Moment correlations between the five subscales<br>of the FADMQ .....      | 64  |
| Table 3.2  | Principal axis factor estimates of the oblique factor loadings<br>for the FADMQ .....     | 66  |
| Table 4.1  | Overview of Themes Generated by Question 1 .....  | 73  |
| Table 4.2  | Overview of Themes Generated by Question 2 .....  | 77  |
| Table 4.3  | Overview of Themes Generated by Question 3 .....  | 82  |
| Table 4.4  | Overview of Themes Generated by Question 4 .....  | 86  |
| Table 4.5  | Overview of Themes Generated by Question 5 .....  | 88  |
| Table 4.6  | Overview of Themes Generated by Question 6 .....  | 91  |
| Table 4.7  | Recurrent Themes Generated Across Questions 1-6.....                                      | 94  |
| Table 5.1  | Demographic Variables for Total Sample used for the<br>Cross-Sectional Study .....        | 110 |
| Table 5.2  | Summary Statistics for the Seven Dependent Variables .....                                | 118 |
| Table 5.3  | Pearson Product-Moment Correlations, 2-tail Significance,<br>using Time 1 Data .....      | 119 |
| Table 5.4  | Summary Statistics for the Seven Dependent Variables and Gender....                       | 120 |
| Table 5.5  | Summary Statistics for the Seven Dependent Variables and Work<br>Experience .....         | 121 |
| Table 5.6  | Summary Statistics for the Seven Dependent Variables<br>and Achievement Level.....        | 122 |
| Table 5.7  | Summary Statistics for the Seven Dependent Variables<br>and Performance Goals.....        | 123 |
| Table 5.8a | Summary Statistics for the Seven Dependent Variables and<br>Mothers' Education Level..... | 124 |
| Table 5.8b | Summary Statistics for the Seven Dependent Variables and<br>Fathers' Education Level..... | 124 |

|            |  |     |
|------------|--|-----|
| Table 5.9  | Summary Statistics for the Seven Dependent Variables and Parents' Employment Status.....                                 | 125 |
| Table 5.10 | Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Maturity.....                       | 126 |
| Table 5.11 | Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Decision-Making Self-Efficacy ..... | 127 |
| Table 5.12 | Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Indecision .....                    | 129 |
| Table 6.1  | Main Issues Generated by the Literature Review, Study 1 and Study 2.....   | 146 |
| Table 7.1  | Study 3 Design of Testing Times, Groups and Intervention Schedule .....  | 162 |
| Table 7.2  | Demographic Information at Time 1 for the Expert and Teacher Groups .....  | 164 |
| Table 7.3  | Data File Configuration for Study 3.....   | 169 |
| Table 7.4  | Gender Summary Statistics for the Five Dependent Variables for Groups 1 and 2 Combined .....                             | 171 |
| Table 7.5  | Summary Statistics for Males and Females in the Expert and Teacher Groups .....  | 174 |
| Table 7.6  | Summary Statistics for Males and Females in the Expert and Control Groups .....  | 179 |
| Table 7.7  | Summary Statistics for Males and Females in the Teacher and Control Groups .....   | 183 |
| Table 7.8  | Demographic Information at Time 1 for the Teacher and Generic Groups.....  | 188 |
| Table 7.9  | Summary Statistics for Males and Females in the Teacher and Generic Groups .....   | 189 |
| Table 7.10 | Summary Statistics for the five Dependent Variables for Males and Females in the Expert Group .....                      | 193 |
| Table 7.11 | Summary Statistics for the Five Dependent Variables for Males and Females in the Teacher group.....                      | 197 |
| Table 7.12 | Summary Statistics for Student Evaluation Sheets .....   | 205 |

## LIST OF FIGURES

|             |  |     |
|-------------|--|-----|
| Figure 7.1  | Mean CM scores for Males and Females Pre-Test to Post-Test .....   | 172 |
| Figure 7.2  | Mean CI scores for Males and Females Pre-Test to Post-Test.....  | 172 |
| Figure 7.3  | Mean CM scores for Females and Males in the Expert and<br>Teacher Groups Pre-Test to Post-Test.....          | 175 |
| Figure 7.4  | Mean M scores for Females and Males in the Expert and<br>Teacher Groups Pre-Test to Post-Test.....           | 175 |
| Figure 7.5  | Mean CI scores for Expert group and Teacher group<br>Pre-Test to Post-Test .....                             | 177 |
| Figure 7.6  | Mean CM scores for Females and Males in the Expert and<br>Control Groups Pre-Test to Post.....               | 180 |
| Figure 7.7  | Mean CI scores for Females and Males Pre-Test to Post-Test .....   | 181 |
| Figure 7.8  | Mean M scores for Females and Males Pre-Test to Post-Test.....   | 181 |
| Figure 7.9  | Mean CI scores for Teacher group and Control group<br>Pre-Test to Post-Test .....                            | 185 |
| Figure 7.10 | Mean M scores for Teacher group and Control group<br>Pre-Test to Post-Test .....                             | 185 |
| Figure 7.11 | Mean R scores for Teacher group and Control group<br>Pre-Test to Post-Test .....                             | 185 |
| Figure 7.12 | Mean CM scores for the Teacher group (matched sample)<br>and the Generic group Pre-Test to Post-Test.....    | 191 |
| Figure 7.13 | Mean CDMSE scores for the Teacher group (matched sample)<br>and the Generic group Pre-Test to Post-Test..... | 191 |
| Figure 7.14 | Mean CI scores for the Teacher group (matched sample)<br>and the Generic group Pre-Test to Post-Test.....    | 191 |
| Figure 7.15 | Mean CM scores for Females and Males across the Four<br>Testing Times .....                                  | 194 |
| Figure 7.16 | Mean M scores for Females and Males across the Four<br>Testing Times .....                                   | 194 |
| Figure 7.17 | Mean CI scores across the Four Testing Times.....  | 196 |
| Figure 7.18 | Mean CM scores for Teacher group across the Three Testing Times...   | 198 |
| Figure 7.19 | Mean CI scores for Teacher group across the Three Testing Times.....   | 199 |
| Figure 7.20 | Mean M scores for Teacher group across the Three Testing Times .....   | 199 |

## LIST OF APPENDICES

|            |  |     |
|------------|--|-----|
| Appendix A | Social Cognitive Career Theory’s Career Choice Model.....  | 255 |
| Appendix B | Stratified Sample .....  | 256 |
| Appendix C | Interview Questions.....   | 257 |
| Appendix D | Interview Consent Form.....  | 258 |
| Appendix E | Survey Consent Script.....   | 260 |
| Appendix F | Career Choice Cycle Course: Model used to Illustrate the<br>Career Choice Cycle Course .....       | 261 |
| Appendix G | Latin Square.....  | 262 |
| Appendix H | Gender Summary Statistics for the Five Dependent Variables<br>for Groups 1 and 2 Combined .....    | 263 |
| Appendix I | Summary Statistics for Males and Females in the Expert and<br>Teacher Groups .....                 | 264 |
| Appendix J | Summary Statistics for Males and Females in the Expert and<br>Control Groups .....                 | 265 |
| Appendix K | Summary Statistics for Males and Females in the Teacher and<br>Control Groups .....                | 266 |
| Appendix L | Summary Statistics for Males and Females in the Teacher and<br>Generic Groups.....                 | 267 |
| Appendix M | Summary Statistics for the Five Dependent Variables for Males<br>and Females in Expert Group.....  | 268 |
| Appendix N | Summary Statistics for the Five Dependent Variables for Males<br>and Females in Teacher Group..... | 269 |
| Appendix O | Unprompted Career-Related Inquiry by a Year 10 Student.....  | 270 |
| Appendix P | The Career Choice Cycle Course Evaluation.....   | 271 |

## ACKNOWLEDGEMENTS

First and foremost, I wish to acknowledge the Australian Research Council (ARC) for its support of this project, along with the staff and students at the school where the research took place. Without the sponsorship and generosity of these organisations, this research would not have been possible.

I have heard many accounts of others' experiences of producing a Ph.D. Compared to these, mine has been a relatively pleasant one. I believe this is largely due to the guidance and support I have received from my supervisors, and my family, friends, and colleagues.

The academic supervision I received enabled this project to run quite smoothly. Peter Creed was the primary guiding force. I thank you Peter, for your willingness to see me whenever I requested, and for your considered and tireless attention during every meeting. I also thank you for your encouragement to publish along the way, which has been very rewarding for me. There is nothing that I would wish to be different in my entire experience of your supervision Peter, thank you. Similarly, my sincere thanks goes to my secondary supervisor, Wendy Patton. Thanks Wendy for your expert feedback, and for encouraging me to be and do all I could along the way. I enjoyed dealing with you, as I did Peter, both in a professional and personal capacity.

I was very fortunate to have a third supervisor, Juanita Muller, whose additional feedback was really helpful. Thanks for your expertise and practical guidance, Juanita. Liz Conlon, through her excellent supervision during my Honours' year, prepared me to be an independent researcher. Thank you for that Liz, and also for your sound statistical advice. I am also indebted to Wendy Wynne, who kindly took on the laborious task of formatting this thesis for me.

My sincere appreciation also goes out to my family members, who have all followed my progress with enthusiasm. I thank you for your interest and support. Special thanks goes to you David, for your loving, patient, and gentle nature, not to mention your abundant culinary creations, and your unwavering generosity. To Laura, whose wisdom and tolerance make me wonder at times whether she is the mother and me the daughter, thank you for being you. To my Mum, your encouragement, interest, concern, and continual support, have got me to this point. You are my inspiration and my guide. To Dad, I know you're observing all this with pride. Thank you for teaching me the importance of getting "that bit of paper." To Sue Ellen, who spent more hours baby sitting than I care to mention, thank you for being the best sister I could possibly have. To Rose, thank you for your wisdom and loving assistance.

Lastly, to my friends Tess and Tess, you girls have seen me through from start to finish and I can't adequately put into words how much it has meant to me to have you there in the background. To all those other friends and colleagues who have helped me along the way, I'm sorry I can't name you all here, but I do so appreciate your friendship, reassurance and guidance.

**LIST OF PUBLICATIONS DRAWN  
FROM THIS RESEARCH PROJECT**

- Prideaux, L. (2001). The Career Choice Cycle Course. In W. Patton, & M. McMahon (Eds.), *Career development programs: Preparation for lifelong career decision making* (pp. 58-69). Melbourne: Australian Council for Educational Research Ltd.
- Prideaux, L., & Creed, P. A. (2001). Career maturity, career decision-making self-efficacy and career indecision: A review of the accrued evidence. *Australian Journal of Career Development, 10*(3), 7-12.
- Prideaux, L., & Creed, P. A. (2002). A review of career development research in Australia and New Zealand from 1995-2000. *International Journal for Educational and Vocational Guidance, 2*(1), 21-38.
- Prideaux, L., Creed, P., Muller, J., & Patton, W. (2000). A review of career interventions: Have investigations shed any light? *Swiss Journal of Psychology, 59*(4), 227-239.
- Prideaux, L., Patton, W., & Creed, P. (2002). Development of a theoretically derived school career program: An Australian endeavour. *International Journal for Educational and Vocational Guidance, 2*(2), 115-130.
- Prideaux, L., & Creed, P.A. (2002). Career theory building in the *Australian Journal of Career Development* during its inaugural ten years. *Australian Journal of Career Development, 11*(3), 42-51.

**STATEMENT OF ORIGINALITY**

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

Signed: \_\_\_\_\_

## CHAPTER 1: INTRODUCTION

## Overview

This research project had two primary interconnected aims. They were, firstly, to test and extend career development theory and, secondly, to evaluate a theoretically derived career education program. The driving principle behind this dual focus was a commitment to bridging the gap between theory and practice. Pre-intervention data were examined to address the theoretical research questions and then a series of three post-intervention tests provided additional data for the program evaluation.

A high school aged sample of students was measured on key career development variables in an attempt to deal with various lines of speculation in the literature, which have, until now, largely been examined with convenience samples of adults. This essentially formed the theory building part of the study. The same variables were then analysed longitudinally to determine the outcomes for these students following a career education program designed to develop in them important career-related skills. A model of career choice development, proposed by social cognitive career theory (SCCT), was specifically applied to formulate this program and thus enable the scrutiny of theory translated into practice.

Career maturity (CM), career decision-making self-efficacy (CDMSE) and career indecision (CI) were the key variables assessed. Although much is known about the correlates of these constructs, they have seldom been studied in unison, and relatively rarely with high school aged participants. Accordingly, all three variables were investigated using a sample of 15 year olds in conjunction with a variety of topical variables, including gender, part time work experience, employment commitment and school achievement ratings, as well as parents' employment status and education. Added to this, are the appeals in the literature (Raskin, 1998; Robbins, 1985) for these key variables (i.e., CM, CDMSE & CI) to be refined by gaining a better understanding of how they relate to the actual process and performance of career decision-making. This led to the inclusion of a measure of adolescent decision coping patterns (Mann, 1988). In terms of the theory building part of the project, data were examined to extend the existing knowledge base concerning the correlates of

these key variables. Further elucidation was also sought by examining them in relation to decision-making styles and behaviours.

The second part of the study was initiated because there was deemed to be a paucity of methodologically sound evaluations of career education programs in the literature (Prideaux, Creed, Muller, & Patton, 2000). The content of the program was carefully tailored to the needs of the students for whom it was designed. This was achieved through a process of gathering contextual information via qualitative data collection and content analysis. Such context specific information was then incorporated with the data gathered for the cross-sectional study (Time 1 pre-intervention data [T1]), and acted as a training needs analysis for the course design.

An extensive review of the career development literature was undertaken in conjunction with this procedure that led to the selection of SCCT as the theoretical basis for the career education program. This theory was considered most appropriate for several reasons, including its contemporary integrative approach and its use of clearly defined and well established constructs incorporating both cognitive and contextual factors. Moreover, SCCT corresponded with qualitative findings because it encompassed elements that matched many of the issues raised. For example, to “build a lot of self value input in the program ... then they can feel better about making their own decisions” (participant #16) was deemed to equate to a need to build career decision-making self-efficacy.

### Rationale

Adolescents are expected to make a variety of career-related decisions whilst attending high school. These decisions directly influence their academic and career paths undertaken before and after they leave school and, as such, can have important ramifications for their futures. Career-related decisions made during a student’s school life have the potential to impact upon, for example, their success in finding suitable employment, job satisfaction and indeed, their overall lifestyle and general well-being.

Compounding the difficulties associated with the crucial role that adolescents’ career-related decisions play in their lives, is the context within which they must be made. The current volatile nature of the world of work also exerts added pressure,

since, for example, many of the skills needed by the employment market of the future are both diverse and continually transforming. Furthermore, adolescents typically experience some confusion associated with the developmental milieu of their search for personal and vocational identity in which they find themselves.

The foremost impetus for this research project was consequently a drive to learn more about, and if possible facilitate, the career-related decisions of high school students. This objective, as discussed above, was sought in a dual manner. It was explored in terms of both the theoretical speculation, as well as by determining the effectiveness of the practical application of career development theory to career education curriculum programming.

Other incentives for the project included calls in the literature for theory to inform practice (Borgen, 1991; Collin, 1996), and for decision-making and goal-setting skills to be fostered, as opposed to the promotion of “one-off” career decisions (Kidd & Killeen, 1992; Lent, Hackett, & Brown, 1999). Many authors have also highlighted the need for studies of more diverse groups of people (e.g., Herr, 1999; Luzzo, Hasper, Albert, Bibby, & Martinelli, 1999) and, as such, prompted the use of economically disadvantaged high school students. Finally, appeals for longitudinal research studies abound in the literature (e.g., O’Brien, Dukstein, Jackson, Tomlinson, & Kamatuka, 1999; Patton & Creed, 2001), as well as specific requests for tests of the effectiveness of interventions designed to increase self-efficacy expectations (Betz & Luzzo, 1996; Betz & Voyten, 1997; Taylor & Betz, 1983). This list of topics for further research, uncovered in the literature, falls short of the gamut of suggestions that influenced the current research project’s conception, however, they serve to illustrate the major catalysts.

### Research Program Outline

The investigations reported in this thesis primarily entailed three studies, for which qualitative and quantitative data were gathered. Table 1.1 provides a summary of these studies. The design and implementation of the theoretically derived career education intervention made up a fourth component. A brief synopsis of each chapter of the thesis is now provided.

As evidenced by the overview and rationale, this opening chapter acts as an introduction to the thesis as a whole. Following the chapter synopses, the significance and limitations of the project and the chief research questions posed will be outlined.

Chapter 2 broadly reviews the career development literature to give the current research project an historical and contextual perspective. It begins with an overview of career development theory, in general, and goes on to focus on SCCT in particular, since it is a specific theory of interest in the present study. Following this, recent career development research conducted in Australia and New Zealand, and career education interventions tested over the past 25 years, are reviewed. These latter two sections of Chapter 2 were taken from two separate articles previously published in refereed journals (Prideaux & Creed, 2002; Prideaux et al., 2000).

Chapter 3 provides a more circumscribed examination of the career development literature. It comprises a review of research concerning the key dependent variables used in the quantitative studies reported herein. The empirical evidence accrued for CM, CDMSE, and CI is discussed first. This portion of the chapter has also been published (Prideaux & Creed, 2001). The theoretical background and accumulated evidence for adolescent decision coping behaviours is then presented. Incorporated in this section of the chapter are the results of a factor analysis of the particular instrument used to measure the decision coping strategies of the present sample of students.

Table 1.1

*Summary Information on Studies 1-3 Reported in this Thesis*

|              | Study 1<br>(Chapter 4)  | Study 2<br>(Chapter 5)  | Study 3<br>Section 1<br>(Chapter 7)                               | Study 3<br>Section 2<br>(Chapter 7)                                     | Study 3<br>Sections 3 & 4<br>(Chapter 7)  | Study 3<br>Section 5<br>(Chapter 7)  | Study 3 Sections<br>6 & 7<br>(Chapter 7)                          | Study 3<br>Section 8<br>(Chapter 7)   |
|--------------|---|---|---|---|---|--|---|---|
| Method       | Qualitative   | Quantitative<br>(Cross-sectional)   | Quantitative<br>(Longitudinal)                                    | Quantitative<br>(Longitudinal)  | Quantitative<br>(Longitudinal)  | Quantitative<br>(Longitudinal)   | Quantitative<br>(Longitudinal)                                    | Qualitative and<br>Quantitative   |
| Sample       | Stratified<br>random<br>sample 30<br>staff/parents                      | 296 Yr. 10<br>students  | 197 Yr. 10<br>students  | Expert group:<br><i>n</i> = 110<br>Teacher group:<br><i>n</i> = 87      | Expert group:<br><i>n</i> = 110<br>Teacher group:<br><i>n</i> = 87<br>Control group:<br><i>n</i> = 94 | Teacher group<br>(matched sample):<br><i>n</i> = 46<br>Generic group:<br><i>n</i> = 48 | Expert group:<br><i>n</i> = 48<br>Teacher group:<br><i>n</i> = 81 | Expert facilitator,<br>four teachers,<br>two guidance<br>personnel,<br>296 students |
| Purpose      | Training<br>Needs<br>Analysis to<br>Inform<br>Design of<br>Intervention | Answer<br>Theoretical<br>Questions and<br>Inform<br>Design of<br>Intervention | Pre-Test/Post-Test<br>Comparison for all<br>students              | Comparison of<br>“Expert” versus<br>Teacher delivery of<br>Intervention | 2 Comparisons:<br>Expert group<br>versus Controls,<br>Teacher group<br>versus Controls                | Theoretically<br>derived course<br>versus generic<br>career education                  | Long term<br>effects of the<br>intervention                       | Triangulation of<br>longitudinal<br>evaluation of the<br>intervention               |
| Data<br>used | Taped<br>interviews<br>content<br>analysed                              | T1 survey data  | Expert group: T1,<br>T2 combined with<br>Teacher group:<br>T2, T3 | Expert group: T1,<br>T2 versus Teacher<br>group: T2, T3                 | Expert and Teacher<br>groups see Section 2,<br>Control group =<br>Teacher group data<br>T1, T2        | Teacher group<br>matched sample:<br>T2, T3<br>Generic group:<br>T2, T3                 | Expert group:<br>T1, T2, T3, T4<br>Teacher group:<br>T2, T3, T4   | Reflexive<br>accounts,<br>pro formas,<br>student feedback<br>sheets                 |

*Note:* Testing times are represented by: T1 = Time 1, T2 = Time 2, T3 = Time 3, T4 = Time 4

Study 1 is presented in Chapter 4. It describes findings generated from interviews conducted with staff and parents at a school, in a low socio-economic area of South East Queensland in Australia, where the entire research project took place. These qualitative data were content analysed and acted as a training needs analysis for the career education intervention.

Chapter 5 provides an account of Study 2. This study used survey data gathered at Time 1, which were examined cross-sectionally to answer a series of theoretical questions. Findings from Studies 1 and 2, discussed in Chapters 3 and 4 respectively, were then taken into account, in conjunction with the review of literature presented in Chapters 2 and 3, to design and prepare the intervention. A detailed description of the resultant career education intervention is provided in Chapter 6. It should be noted here also that the material presented in Chapter 6 is included in a book chapter that was recently published (Prideaux, 2001).

Chapter 7 describes the longitudinal investigation, entitled Study 3, which used survey data gathered at Time 1, Time 2, Time 3 and Time 4 to evaluate the intervention. This study incorporated eight subsections, each relating to the manner in which these data were scrutinised. Accordingly, Chapter 7 is divided into eight sections.

The first of these examines the outcomes for all students who did the intervention according to gender since males and females displayed different results at Time 1 as evidenced by Study 2. In the second section of Study 3, the longitudinal data are examined according to the mode of delivery of the course. One group of students attended the course when it was facilitated by the researcher as the career education “expert” (i.e., Expert group), while the other group undertook the course later when it was delivered by regular classroom teachers (i.e., Teacher group). The researcher was considered to have the necessary expertise to undertake this “expert” facilitator role because, prior to her training in psychological research, she had worked as a teacher for over 15 years and has a degree in education. Following this, Pre-Test/Post-Test outcomes are examined for these two groups of students separately and compared with control groups of participants. These latter two analyses comprised the third and fourth sections respectively.

The fifth section of Study 3 examines outcomes for students who did the theoretically founded career education intervention in comparison with the outcomes for the students who did not attend the course. This latter group of students (Generic group) did not take part in the intervention because they were already enrolled in a school based, generic vocational program. As such, the focus here was a comparison between the theory based intervention and a vocational education and training (VET) type of course implemented by the school.

The sixth and seventh sections of Study 3 are concerned with the long term effects of the intervention whereby Pre, Post and follow-up data are examined. The final section of Chapter 7 presents data gathered from supplementary evaluative sources to augment the longitudinal survey data. Reflexive accounts provided by the researcher and the teachers who facilitated the intervention, feedback from guidance personnel and students' ratings and comments on course evaluation sheets were inspected. Thus, this part of Study 3 acted as triangulation for the longitudinal findings.

Finally, overall conclusions are drawn in Chapter 8. This chapter contains a review of the findings from all three studies and discusses the contribution made by the entire project. Reflections on the limitations of the research and implications for educational policy and future research are also discussed. Once again, a portion of this chapter was taken from an article recently published in a refereed journal (Prideaux, Patton, & Creed, 2002).

### Significance of the Research Project

The career prospects of young people today are very different from those of previous generations. The traditional concept of a career as a "job for life" is disappearing and, consequently, pathways to employment are becoming much less predictable. Political and theoretical rhetoric has espoused the need for more comprehensive career counselling programs, and it is generally accepted that, more than ever before, career counselling needs to equip students with the confidence and skills necessary to put them in command of their own futures.

Despite the rhetoric, in practice, career education in Australia remains disjointed and "has largely occurred on an ad hoc basis at a school level" (McMahon,

1997, p. 137). Moreover, in a review of Australian career activity relating to Vocational Education and Training (VET), McCowan and Hyndman (1998) criticised the deregulated and unstructured approach that currently exists. Many recommendations were made by these authors for young people to “successfully transverse multiple pathways” (p. 37), with the need for specific career related research projects highlighted. McCowan and Hyndman also maintained that satisfactory career decision-making skills and option planning are even more critical now that job pathways are so complex. They further contend that career counselling must be delivered with “deliberate intention [to achieve] major gains not only for individual Australians but also for the country itself” (p. 40).

Given this context, the goals of the current research project, to learn more about adolescent career decision-making, and to evaluate a carefully planned career education program, seem warranted. It is my intention that this thesis will advance career development theory building and contribute to policy and curricula formulation within Australia.

### Limitations of the Research Project

Conducting field research is a difficult undertaking that can be laden with technical drawbacks. The first of these pertains to sampling issues concerning representativeness and generalisability. For Study 1, a stratified random sample was attained in an attempt to gain opinions from all facets of the school community. However, it should be noted that parents were not given equal representation compared to staff. This approach was taken, as the teachers were considered to have a better overall view of the career education needs of the entire student body. Perhaps different themes would have emerged if more parents were included in this qualitative study, and such inclusion may be relevant for future research. Moreover, it should also be noted that the findings of Study 1 may not generalise to other schools. This study was designed to gain context specific information and, as such, would not necessarily pertain to other schools even if they were located in similar disadvantaged areas.

In terms of the sample of students involved in the quantitative studies, all possible precautions were taken to achieve random allocation to groups. However,

this was possible only for those who undertook the intervention. These students were members of 10 heterogeneous class groups. The original assignment to these classes, by staff at the commencement of the school year, did not involve streaming. That is, students were not grouped according to particular ability levels. Hence, these 10 classes of students were able to be randomly assigned to program delivery groups. Five classes were randomly chosen to do the course first, with the researcher as “expert” facilitator, while the remaining five classes did the intervention later with teachers who had received training in the program.

Two other class groups were not included in the intervention groups. These two classes were enrolled in a school-based vocational program. These students had been assigned to special classes at the beginning of the year so that they could be given learning experiences throughout the year with a career focus. For this reason it is important that conclusions drawn about the differences between the theoretical and school-based programs be treated with some caution. Students in the two classes who opted for the vocational course (Generic group), were fundamentally different from their colleagues who opted for mainstream education. Even though an attempt was made to procure a closely matched sample of Teacher group students to compare with the Generic group students, it is recommended that this unavoidable drawback in the design be kept in mind.

With regard to the generalisability of the quantitative findings, and despite the precautions taken to maximise reliability and validity, inferences about other students in other schools should be made tentatively. Perhaps these results could pertain to similar groups of students in other low socio-economic circumstances within Australia, however, this is yet to be established. It is also doubtful whether the findings of this study would generalize to schools in the same type of socio-economic contexts that are situated within other countries and cultures. Whether the findings from this thesis would provide insight for those working with disparate groups of students, for instance, in privately funded institutions, is also uncertain.

Another limitation of this research project is the researcher’s presence in the school as researcher. Participants’ attitudes toward career education may have been influenced by the very fact that someone was there to study it. Because I, as the researcher, conducted and analysed the interviews in Study 1, it is important to acknowledge that there was a potential for bias. When coding the data, for example,

nuances may have been overlooked that another researcher could have discerned and, thus, placed less importance on some information that would otherwise have been flagged. The information that respondents proffered may also have been subject to bias. They could have been influenced by the researcher's presence when offering their answers and thus made statements that they deemed were of interest to the project rather than only discussing the issues to which they personally ascribed.

Caution is also warranted in relation to the quantitative data since they were collected via self-report inventories, which are potentially subject to social desirability and other biases (McBurney, 1994). The instructions given to teachers, who supervised the completion of surveys attempted to guard against this and other possible threats to the validity of findings (e.g., random responses). However, it is important to note that, although the researcher moved from classroom to classroom to monitor the conditions by which surveys were completed, one cannot guarantee that all transgressions were detected.

Finally, field research in general has many inherent shortcomings that may restrict the integrity of results. Confounding variables can be difficult to deal with, and may even exist without the researcher's awareness. In the present study, steps were taken to try to ensure that extraneous events did not differentially affect the project. However, a busy school setting introduces many challenges. Absenteeism, for example, proved to be an unavoidable dilemma. This meant that a small number of students who were given the intervention did not attend all lessons and, hence, conclusions were drawn about a course that was not strictly completed in full by everyone. Students also visited a career exposition during the course of the research. Since all participants were required to attend, and since it took place after both groups had completed the intervention, this event was not considered unduly problematic. However, it is possible that this exposition had more impact upon some students than others and may have corrupted the results to some degree.

Although this project was, by necessity, quasi experimental in design, its methodological strengths lie in its adherence to experimental conditions where ever possible. Readers may be assured that precautions were taken at every conceivable juncture to comply with the requirements of sound research practice and, as such, results may be interpreted with a satisfactory degree of confidence. Specific strengths of the design include the fact that surveys were conducted at the same time by all

participants under the same conditions. Moreover, the instruments that made up the survey were presented in counterbalanced order at each of the four testing times to minimise order effects. Yet another strength was that the Teacher group students, who did the intervention later than the Expert group, provided a reliable control group for pre and post intervention comparison. Nevertheless, the findings presented in this thesis represent a small inroad into career development research conducted in high school settings. Due to the nature of this type of research and its associated pitfalls, all findings should be interpreted tentatively. Many more investigations of this nature within “real world” settings are required to give substance to this study and add to the validity of this project.

### Research Questions

The central lines of inquiry for each of the three studies undertaken are listed below. These main questions served to guide the data collection, the analyses and the discussion of findings.

#### Study 1:

What are the perceived career education training needs of these students?

What are the chief circumstances that are considered by teachers and significant others to impact upon the career decision-making of Year 10 students at the school?

#### Study 2:

What are the relationships amongst levels of CM, CDMSE, CI and decision coping patterns for this sample of high school students?

Are these variables associated with demographic and contextual variables?

#### Study 3:

What are the immediate and follow-up outcomes for students who attend a theoretically derived career education course designed to enhance career decision-making?

## CHAPTER 2: LITERATURE REVIEW

### Career Development Theory

#### *Introduction*

Parsons, a renowned educator and visionary, is recognised as the originator of the vocational guidance movement, which preceded modern career development counselling (Zunker, 1998). He worked around the turn of the 20th century. Since that time, numerous theories have evolved and have made meaningful contributions to the field of career development. This has led to the acquisition of a broad conceptual and empirical foundation of knowledge enlightening many aspects of career-related behaviour.

A core set of theories have been nominated as the dominant ascendants to the field. Osipow (1990) proposed Holland's (1985) trait and factor approach, social learning theory (Mitchell, Jones, & Krumboltz, 1979), Super's (1980) developmental theory, and the theory of work adjustment (Dawis & Lofquist, 1984). Savickas and Lent (1994) concurred, stating these four main theories, along with Bordin's (1990) psychodynamic model, "serve as the foundation for the field of career development and counseling" (p. 3). In general, the work of Super and Holland are viewed as the most influential theoretical standpoints. Borgen (1991), for example, identified Super and Holland as "our field's pre-eminent figures" (p. 276). More recently, in a comprehensive review of the literature, Patton and McMahon (1999) placed Super and Holland together as "the two most influential writers in the field of career development" (p. 40).

While these key theories, along with many other informative perspectives, have elucidated a variety of factors that impact upon career development, the accrual of a deeply synthesized knowledge base has been protracted. A fully integrated career theory has yet to be refined and, according to Vondracek (2001), "vocational psychology has not realized its potential as a developmental science" (p. 252). Thus, in the realm of scientific investigation, career development theorizing is an area of research that is in a relatively early stage of advancement (Brown, 1990; Brown & Brooks, 1996; Savickas, 2001a).

Nevertheless, key figures in the field have recently contributed to a special issue of the *Journal of Vocational Behavior* (2001), which provides a comprehensive account of what has been achieved and what needs to occur in order to “raise awareness of the challenges faced by vocational psychology and identify possibilities for advancing the discipline” (Savickas, 2001b, p. 167). Indeed, Savickas (2001c) outlined eight specific objectives that he synthesized out of this collection of expert opinion to provide the field with a clear direction for the next decade. He advocated a vision that “concentrates on advancing scientific understanding of vocational behavior and providing information to shape career interventions and inform public policy” (2001c, p. 284).

An appeal for research integration and theoretical convergence has been promoted in the literature since the early 1990s (e.g., Savickas & Lent, 1994; Osipow, 1990) with experts calling for “a coherent and practical overarching picture” (Patton & McMahon, 1999, p. 133) to amend both the fragmentation and conceptual overlap that have tended to characterise this broad theory base in the past. Many authors have made appeals for better links between the theories (e.g., Osipow; Savickas, 1995), challenging theorists to provide integrative frameworks (e.g., Lent, & Hackett, 1994; McMahon & Patton, 1995; Osipow & Fitzgerald, 1996; Savickas & Walsh, 1996). Attempts have been made to identify common concepts and to explicate similar constructs and outcomes amongst existing theories (e.g., Hackett, Lent, & Greenhaus, 1991; Minor, 1992; Swanson & Gore, 2000). Efforts to study the career development of minority groups and attempts to apply theory to practice have further extended the focus of late (Collin, 1996; Heppner, Casas, Carter, & Stone, 2000; Sampson, Watts, Palmer, & Hughes, 2000; Young & Chen, 1999). The need for career research to be mindful of, and responsive to, specific cultural contexts is also gaining attention (Brown, 2000; Mau, 2000; Spokane, 2002; Stead & Watson, 1998).

The new millennium has seen the ascendance of a contemporary career theory, entitled social cognitive career theory (SCCT), which is attempting to respond to these appeals. Indeed, the authors of SCCT maintain it was their explicit aim to develop a theory of career development that integrated all perspectives (Lent, Brown, & Hackett, 1994). In a review of theoretical advances since 1992, Swanson and Gore (2000) highlighted the strong and accumulating empirical support enjoyed by SCCT.

The strengths of this approach include its constructivist outlook, focus on contextual variables, efforts to inform career counselling practice and acknowledgement of personal agency. According to Swanson and Gore, SCCT has surpassed all others, with the exception of Holland's theory, in its contribution to vocational psychology during the past decade.

Social cognitive career theory provided the framework for the career education intervention evaluated in this thesis. Therefore, following a broad account of the literature prior to its inception, SCCT will be reviewed in detail. Current career development research in Australia and New Zealand is then summarised. This is followed by a description of current career education policy and practice, with an emphasis on the Australian context. A brief overview of a critique of career education intervention evaluations that have been conducted worldwide during the past 25 years is then provided. This chapter concludes with a review of the literature concerning the key career development variables employed in this thesis.

### *Clarification of Career Theory Terminology*

In order to facilitate a broad understanding of career research, a description of relevant terminology is required. Firstly, the concept of *career* has changed over time since the inception of this field of endeavour. Initially designated the label *vocation*, it pertained to the professional working life of the individual. This evolved to the contemporary conception of *career* in terms of an all encompassing process of experiencing a variety of occupational roles and personal perceptions throughout life. This distinction reflects the changing context of work within societies during this period. The original concept referred to "an orderly progression up a hierarchical ladder within an organization or profession" (Watts, 1996, p. 43). However, in today's post-industrial society and post-modern culture, the construct of *career* requires a more encompassing definition, describing a process of life-long learning and decision making as individuals adjust to continual changes in their work activities and life roles (Savickas, 2001a).

The terms *vocation*, *occupation*, *job* and *work* are now used interchangeably to denote activities and positions of employment, whereas *career* refers to the performance and positions within a vocation, occupation or job, together with a plethora of related activities associated with an individual's lifetime of work (Savickas, 2001a; Zunker, 1998). Hence, the way in which the term *career* is used in contemporary literature is generally more inclusive than it was previously conceived.

Interrelated with the meaning of career are the various terms that have been employed to connote the application of career theory. Various referred to as: occupational counselling, vocational guidance, career counselling, vocational counselling, and career guidance, these activities include individual and group instruction, guidance, information, testing, and computer programs. Once again, the terminology has evolved according to the changing context of its usage. At first, *vocational guidance* was coined to illustrate the innovations of early career educators who counselled students on the "value of hard work and the benefits of occupational information" (Zunker, 1998, p. 9). Later, the emergence of differential psychology heralded the provision of tools for the appraisal of abilities, interests and personality traits in correspondence with particular occupational demands (Dawis, 1992).

This straightforward approach to vocational guidance was re-examined under the influence of Roger's (1942) client-centred theory. A move toward nondirective *career counselling*, where clients were in control of their own destiny ensued. During the latter half of last century, as the dominant view became one of career as a developmental process, the term *career development counselling* was used. More recently, there have been dramatic shifts in the workplace where significant changes in the very nature of work and the structure of occupations have occurred (McClelland, Macdonald, & MacDonald, 1998; Savickas, 1996; Watts, 1996). Within this context, it is postulated that individuals will need to learn how to manage their own careers, to "seek satisfaction in multiple areas [and to be] mindful of the complex interplay of life roles over time" (Phillips, 1997, p. 275). Consequently, lifelong career development learning has become the focus of career guidance and vocational education initiatives. The change in focus from teaching to learning means that career teachers, advisers, and counsellors may be more appropriately designated the title "*career development facilitator*" (Patton & McMahon, 1999, p. 207).

### *Career Development Theory: Content and Process*

Career theorizing first embraced a view of career guidance that was ostensibly concerned with individual differences. Theorists endeavoured to forecast optimal career choices according to the characteristics of individuals. They investigated the composition of influences on career choice such as individual interests and values and the contextual influences such as political decisions and work environments. These early career theories were thus content focussed. In the latter part of last century, however, theorists tended to investigate careers from a developmental perspective. This domain of investigation aimed to account for change over time and decision making processes (Savickas, 2001a). Thus, a distinction can be made between two broad groups of theories: content focussed theories and career theories based on developmental processes. The work of the principal theorist from each of these research perspectives is outlined to provide the backdrop for the detailed review of SCCT, which aimed to incorporate both these perspectives.

#### Content Based Career Theory

##### *Holland's Theory of Vocational Choice*

Holland (1985) developed and continually revised a simple and practical theory of vocational personality, which is predicated upon matching occupational and environmental typologies. This theory has spawned a considerable amount of research and forms the basis for a great deal of practice within the field of career counselling (Brown & Brooks, 1996; Osipow, 1994; Swanson & Gore, 2000). Many assessment tools have been devised and validated in the course of refinement of this theory (Patton & McMahon, 1999). Holland's brief, self administered tests (e.g., My Vocational Situation & the Self-Directed Search) have long served as heuristic tools to examine the career alternatives that best suit individuals (Gregory, 1996).

Holland contended that individuals can be classified into one of six theoretical personality *types*: realistic, investigative, artistic, social, enterprising, and conventional arranged in an hexagonal model. These are specified according to individuals' distinctive preferences, outlooks, competencies, and self-perceptions

(Gottfredson & Holland, 1996). The types represent typical ways in which people respond to the world. Two to three digit codes are used to classify people, rating them on degrees of conformity on a combination of the six types.

Environments are categorised in a similar fashion with a corresponding set of constructs also categorised using a three digit code representing a combination of three of the six possible typologies to denote the nature of work settings (Spokane, 1996). Following on from this dual classification process comes the prediction and possible explanation of consequences that ensue from the interaction of certain types with specific environments. Such outcomes, according to Holland (1985), include varying levels of satisfaction, stability and performance.

Holland's theory also includes the construct of *congruence*, which refers to the degree of Person-Environment fit. The greater the fit, the greater the congruence, and this is assumed to lead to the most favourable outcomes (Hackett & Lent, 1992). In essence, people seek congruence and they are assumed to be most satisfied, persistent and productive when their personality closely matches the type of setting in which they work (Osipow, 1994).

During the last decade, Holland's theory has continued to attract much research attention (e.g., Betz, Harmon, & Borgen, 1996; Clayton & Fletcher, 1994; Goble, 2001). Investigation with regard to the accuracy of the congruence hypothesis continues to generate debate (Swanson & Gore, 2000), however, and the suitability of Holland's hexagonal model for non-Western cultures has been questioned (Watson, Stead, & Schonegevel, 1998). Nevertheless, Holland's theory has accrued a large body of supportive evidence (Spokane, 1996) and remains a potent influence on practice as evidenced by its frequent use as a basis for many career materials (Patton & McMahon, 1999; Swanson & Gore, 2000). The assessment of vocational interests is perhaps the most widely studied branch of research to emanate from Holland's legacy (e.g., Goddard, Simons, & Patton, 2000; Hosking & Athanasou, 1997; Keevers & Bradley, 1999; Lenox & Subich, 1994; Simons, Goddard, & Patton, 2000). In summary, according to Spokane, it is "the combination of empirical support and practical application [that] accounts for the theory's popularity amongst the public as well as amongst professionals" (p. 62).

## Process Based Career Theory

*Super's Life Span, Life Space Theory of Career Development*

Donald Super is widely reputed to have had a tremendous influence upon the study of career development (e.g., Bingham, 2001; Borgen, 1991; Brown & Brooks, 1996; Hackett, Lent, & Greenhaus, 1991). It is interesting to note, however, that while Holland's work continues to contribute to the field of career psychology in a practical sense via the persistent application of his hexagonal model to career choice counselling, Super has had "a much smaller impact on practice" (Brown & Brooks, 1996, p. 3). Nevertheless, Super's theory, which has been continually tested, expanded, revised and refined from 1953 until the present day, is commended on a variety of fronts. These include an appreciation of its broad perspective on life span career development (Patton & McMahon, 1999), and for its comprehensiveness (Brown, 1990). In addition, Super himself has been praised for his scholarly expertise (Borgen, 1991) and brilliant reasoning (Brown, 1996).

Super and Jordaan (1973) outlined the vocational life stages and corresponding developmental tasks via a synthesis of existing literature. They also conducted an examination of the preliminary findings from the Career Pattern Study. This longitudinal assessment of one hundred ninth grade students was undertaken over a period of twenty years and formed the basis for Super's theorising about vocational development.

Portrayed as a segmental theory by Super (1990), this "loosely unified set of theories" (p. 199) deals with particular aspects of career development. Each "segment" has generated a considerable amount of research. This has led to the creation of many unique constructs such as *career maturity*, which will be reviewed later in this chapter as it is one of the key career development constructs employed in the present research project. Super's work has also generated several assessment instruments to conceptualise and measure various aspects of career behaviour (Herr, 1997). Super was greatly influenced by a variety of psychological domains. Perhaps it is this diverse array of forebears that has predetermined the capacious nature of Super's work. Indeed, the fourteen propositions that encapsulate Super's theory clearly reflect the scope of his thinking and the blending of a number of fields.

Unlike many stage theorists, Super stressed that his stages “tend to overlap and are not clearly defined by age limits” (1990, p. 215). Further, Super’s stages were unique in that “the psychological changes achieved by passing successfully through a given stage [were] not necessarily permanent” (Smart & Peterson, 1997, p. 359). He devised the concept of *recycling* (Super, 1990) to describe the process of returning to previous stages of development to facilitate personal growth and as a means of coping with technological or social change (Smart & Peterson). Accordingly, a *maxicycle* depicted the progression through the stages and a *minicycle* represented a return to a previous stage (Patton & McMahon, 1999). Super viewed such returns to prior stage issues as predictable and positive. He purported that minicycles involved periods of exploration, growth, establishment, maintenance and decline, and that recycling provided opportunities for “enhancing maturity, coping power, and creative productivity” (Smart & Peterson, p. 359).

Two pictorial representations were devised by Super to graphically portray the key aspects of his theoretical framework. The first of these, the Life-Career Rainbow, contained two dimensions relating to the life span, life space approach to career development. Essentially, the term *life span* was used to represent the developmental process of career behaviour throughout an individual’s lifetime. It was depicted in over-arching upper bands of the “rainbow” showing Super’s life stages and approximate ages of vocational development from Growth on the left, up to Maintenance at the top, and Decline over on the right. The variety of roles that individuals are said to adopt over the course of their life span, which Super (1980) proposed were played out in four principal *theatres* or contexts, formed the *life space* part of the model.

Super is renown for his attention to the continual modification and refinement of his work. Thus, his archway model, which he entitled “A Segmental Model of Career Development” (1990, p. 200), resulted from his decision to present an improved version of the Life-Career Rainbow (Super, 1992). Super used a Norman arch with its well-defined stone slabs to depict the “segments” of the theory. It was Super’s aim to give more weight to the determinants of career development and to clarify the complex, yet unified nature of career development (Super, 1990). The base and two sides of the archway, according to Super (1990), reveal the variables that act upon the person, and vice versa, as the individual “pursues his or her

educational, familial, occupational, civic, and leisure careers” (p. 201). Over the top of the archway are two symmetrical segments denoting the developmental stage and role self-conception of the individual. The keystone of the arch signified the “self”. Super viewed the self as the “the decision maker in whom all the personal and social forces are brought together” (1990, p. 203) and, as such, the pivotal component of his theoretical framework. True to his eclectic approach in constructing his segmental theory, Super nominated learning theory as the cement that held together the stones within his archway model.

Super’s empirical research, synthesis, reflection and writing brought about a shift in career guidance from a perspective primarily focused on choosing the most suitable job, to one that placed more emphasis on the characteristics of the individual making the choices (Herr & Cramer, 1996). The research on career behaviour generated by Super’s work and the ensuing construction of instruments to assist career counselling approaches has, and continues to be, a rich source of multi-faceted theory ripe for further refinement (Borgen, 1991; Herr, 1997; Savickas, 2001a). Indeed, the plethora of studies based upon Super’s ideas well after his death (e.g., Blustein, 1997; Keevers & Bradley, 1999; Repetto, 2001; Smart, 1998) attest to the value of this abundant theoretical base for vocational psychology.

It is important to note, however, that research to date has not specifically tested all of Super’s fourteen propositions, although supportive evidence has been found for many of his related concepts. Thus, there is a call for researchers to establish “tighter connections to Super’s propositions” (Hackett & Lent, 1992, p. 429) so that equivocal results, such as those pertaining to career exploration, may be afforded more direct and intensive empirical investigation. Moreover, specific aspects of his theory have been identified as requiring further refinement. These include Super’s notion of self-concept, emerging career patterns, the career behaviour of minority groups, as well as the construction and evaluation of new measurement instruments for variables such as career adaptability (Herr, 1997). Nonetheless, many writers in the field express views similar to this one when discussing the contribution of Super: “His work had a powerful impact during the second half of the twentieth century, and it remains extremely relevant as we enter the new millennium” (Marques, 2001, p. 19).

### Integration of Career Theory

The overview of career development theory provided above accented a distinction between two broad groups of theories; content focused theories and those based on developmental processes. This distinction is reflective of the underlying philosophies that predominated during the inception of the various theories. In the case of the content-based theories, differential psychology was a major influence. From this perspective, the self was assumed to be formed via intrapsychic, unconscious forces and biological impulses, and was regarded as relatively impervious to change after early childhood (Lent & Hackett, 1994). Such a standpoint is said to be deterministic in its view and related to the unifying principle or root metaphor, *mechanism*.

Both determinism and behaviourism, the second major force in psychology to influence psychological research, regarded the self and other mental processes as outside the sphere of that which could be studied scientifically. These schools of thought presumed a linear, one-way direction of causality. Hence, the term mechanism is used as a label for this worldview of the scrutiny of human behaviour because phenomena are explained in much the same way as a machine operates with a focus on one thing leading to another, that is, cause and effect (Patton & McMahon, 1999). The process based developmental theories on the other hand, came from a worldview labelled *organicism*. Human behaviour from this perspective was perceived in terms of an orderly maturational process with a focus on movement from one stage of development to the next via a process of individual growth (Patton & McMahon).

In their examination of the short-comings of career theory, Collin and Young, (1986) argued that a lack of rigor and coherence in the field stems from these approaches' underlying perceptions of the world that do not acknowledge the reality of subjective experience. These authors maintained that a shift to *contextualism* is required to amend theoretical inadequacies in both content and method. Contextualism views the world as events that are independent of the individual but are interpreted from the unique perspective of each person within a specific domain at a specific time. The interrelationship of cause and effect, continuity and discontinuity of development, and subjective experience epitomise this worldview.

According to Collin and Young, the epistemological and methodological modifications that would ensue with the adoption of contextualism by career theorists would “open up new ways of thinking regarding career and generate the level of understanding of careers needed in a changing world” (p. 850).

Within this context of appeals for a philosophical shift, there have been some optimistic accounts of beneficial trends that are seen to augur well for the future of career theory. A notable view was expressed by Borgen (1991) who referred to the “cognitive revolution” (p. 279) as a means toward the integration of career psychology. The cognitive revolution pertains to the inclusion of internal cognitive factors as influential components in the lives of people who actively shape their world. This is a clear shift in emphasis away from positivist epistemology, which has dominated scientific practice for centuries. Most career choice theories were formulated under positivist assumptions (Brown & Brooks, 1996). These include notions such as: people can be studied separately from their environments, all humans are passive reactors to their surroundings and all knowledge is contained within the boundaries of scientific method.

Positivism comes under the umbrella of the objective worldviews of mechanism and organicism discussed previously. This traditional approach to scientific investigation has been challenged by the contextual worldview emphasis on subjectivity. The contextual worldview is related to the constructivist epistemology with its acknowledgement of humans as active agents or as Ford (1987) put it, humans as self-constructing living systems. This basic modification of approach, “seeing people as active rather than passive agents” (Borgen, 1992), underpins the cognitive revolution that many contemporary theorists are embracing (Borgen, 1991). Indeed, Borgen emphasized “the field’s aversion to the notion of an inactive, passive client” (p. 281) further stressing the prominence of human agency within the contextualist approach as a facilitative agent of theoretical convergence. According to Savickas (1995) however, it is crucial that theorists avoid the “uniperspectival tunnel vision of radical positivism or of extreme constructivism” (p. 29). He maintains that a combination of modern macrotheory, which “has furnished the superordinate philosophy of science for vocational psychology” (p. 29), and postmodern microtheory, which is emanating from constructivist vision, “can enrich and deepen vocational psychologists’ understanding of work life” (p. 29).

To summarise, there have been differing philosophical waves underpinning psychology, and thus career development theorizing, during the 20th century. According to Mahoney and Patterson (1992), four such waves can be identified, each reflecting a different view of the self. First, psychoanalytic theory viewed the self in a deterministic way. Behaviourism was nominated as the second force in psychology whereby the self was seen as a reservoir of environmental learning experiences. The third force encapsulated the existential and humanistic theories that highlighted potential for human agency making self the central component of the study of behaviour (Lent & Hackett, 1994). The fourth force in psychology has been the cognitive revolution (Mahoney & Patterson, 1992). Theories connected with this approach view the self as an active agent capable of constructing personal reality.

This last wave of psychology has greatly influenced contemporary career development theory. Indeed, “vocational researchers of all theoretical persuasions are exhibiting a greater tendency to include cognitive variables in their research and to view people as active agents in their own career development” (Lent & Hackett, 1994, p. 81). The particular theory that was employed as the framework for the career education intervention to be evaluated in the present study was chosen due to its explicit alliance with this cognitive trend.

Social Cognitive Career Theory was also chosen because of its commitment to developing an integrative model of career development that views “people and their environments in more fluid, dynamic terms than do career models that are based exclusively on trait, psychodynamic, or behavioral conceptions” (Lent & Hackett, 1994, p. 98). The cyclic nature of career development, originally posited by Super (1990), is also a feature of SCCT since its developers, Lent, Brown and Hackett (1994) advocate a process of career development as one which “repeats itself continuously over the lifespan, although it is perhaps most fluid up until late adolescence” (p. 89). Finally, SCCT was also chosen to provide the foundation for the career education intervention to be evaluated in this thesis due to its “consistent empirical findings” (Swanson & Gore, 2000, p. 247). The following section of this chapter provides a detailed account of the background, key assumptions, constructs, and theoretical models of SCCT along with a review of some of the empirical evidence supporting this contemporary constructivist theory.

### Social Cognitive Career Theory

Social cognitive career theory (SCCT) is claimed to be the only new theory to emerge in the career development literature that aims to provide an integration of conceptually related constructs and bridge the gaps between competing theories and sub-fields of psychology (Lent & Hackett, 1994; Maddux, 1995; Patton & McMahon, 1999; Zunker, 1998). Rather than produce yet another separate model, the authors of SCCT have approached theory development with three specific objectives designed to “create a more organized, coherent account of career behavior” (Lent, Brown & Hackett, 1996, p. 375). These three aims were to:

- a) bring together conceptually related constructs  
(e.g., self-concept, self-efficacy);
- b) more fully explain outcomes that are common to a number of career theories (e.g., satisfaction, stability); and
- c) account for the relations amongst seemingly diverse constructs  
(e.g., self-efficacy, interests, abilities, needs).

(Hackett & Lent, 1992, p. 443)

Lent et al. (1996) set out to find common conceptual ground to facilitate communication and cohesion within the career theory literature. Like Borgen’s (1991) contention that “cognition and human agency have been mainstream assumptions of vocational psychology as far back as Parsons” (p. 283), Lent et al. noted an implicit acceptance of cognition and personal agency within the field. To illustrate, they cited Gottfredson’s (1985) work on self as an active agent, Super’s (1990) incorporation of Kelly’s personal constructs, as well as Rounds and Tracey’s (1990) information processing with its focus on cognition. Essentially, they viewed cognition as a “fulcrum for theoretical convergence” (Lent & Hackett, 1994, p. 83) and career development as a process of adjustment to and influence between active agents and their environments. Lent et al. maintained that it was time for the field to verify many long held assumptions that have not always been explicit in theory.

These authors specified the following assumptions as requiring support:

- a) people help construct their own career outcomes;
- b) their belief systems play a key role in this process;
- c) people are not merely beneficiaries (or victims) of intrapsychic, temperamental, or situational forces; and
- d) behavior is often flexible and susceptible to change efforts

(Lent et al., 1996, p. 373)

Hence, in the sense that these underlying commonalities have been highlighted by Lent et al. (1996), SCCT has made some progress toward an integration of various career theories. While doing so, they have been perspicacious to retain the essence of career development theory as it stands and not, as Savickas (1995) cautioned, used tunnel vision. Instead, they make use of major variables that have been previously identified and elaborated upon and seek to outline the central processes that link these variables together. Lent et al. (1996) aimed to extend the body of career knowledge from an integrative perspective. Indeed, they are particularly interested in some aspects of the four major theories that Osipow (1990) identified as being the most dominant in the field, namely the work of Super, Holland, Dawis and Lofquist, and Krumboltz and colleagues' social learning theory. For example, in the case of Holland's (1985) theory, SCCT attempts to explain how types develop. When questioning the Theory of Work Adjustment (Dawis & Lofquist, 1984), the authors of SCCT are seeking to determine how people acquire abilities. Moreover, SCCT has set out to provide the potentially unifying framework to augment Super's (1990) postulations by further explaining and specifying the learning processes that "cement" his models. Finally, Lent et al. were attempting to extend Krumboltz, Mitchell and Jones' (1976; Mitchell & Krumboltz, 1996) theory by explicating how learning experiences influence the acquisition of interests.

### *Social Learning Theory*

Of the four major theories listed above, the Learning Theory of Career Counselling (Mitchell & Krumboltz, 1996) is the most closely related to SCCT. Both theories were derived from the same foundation, the Social Learning Theory of

behaviour proposed by Bandura (1977). According to social learning theory, two main types of learning experiences produce individual cognitive and behavioural preferences and skills. These are labelled *instrumental* and *associative* learning experiences. The former refers to situations when an individual is positively reinforced or punished for a particular behaviour and its concomitant cognitive skills. The likelihood that a certain behaviour will be repeated is said to increase if the individual received positive reinforcement, and conversely, to decrease following negative reinforcement (Bandura). Thus, the type of reinforcement gained by an individual is instrumental upon the type of behaviour and skill development that ensues. On the other hand, associative learning experiences transpire when an emotionally laden event or stimulus is linked with one that was previously neutral. This connection may occur directly, such as when an individual associates a traumatic experience with the situation in which it took place. Associative learning may also occur vicariously. For example, when someone chooses to perform a particular behaviour or cognitive function subsequent to that individual's observation of its reinforcement contingencies upon others.

Krumboltz, Mitchell and Jones (1976) began working with social learning theory by applying its principles to career decision making. They presented a series of testable hypotheses designed to examine the factors that influence the development of preferences and decisions about careers. These factors included: genetic endowments, environmental conditions, learning experiences and task approach skills. Further, Krumboltz et al. proposed that particular outcomes ensued from interactions amongst these influences. The hypothesized outcomes included self-observation generalizations, world-view generalizations, and entry behaviours. Nineteen theoretical propositions were presented.

The social learning theory of career decision-making has evolved since its beginnings in 1976, although with few major inclusions. For example, the second hypothesized outcome, worldview generalizations, was added to the theory in its 1996 restatement (Mitchell & Krumboltz, 1996). Principles of learning theory were applied to career counselling to assist practitioners in their endeavours to “help people shape their own career paths” (Mitchell & Krumboltz, p. 250). This application of the theory has provided some worthwhile insight into how “individuals learn about themselves, their preferences, and the world of work through direct and

indirect experiences” (Patton & McMahon, 1999, p. 59). More recently, Mitchell, Levin and Krumboltz (1999) heralded a new outgrowth of the learning theory of career counselling in the form of planned happenstance theory. This extension of the theory investigated the presence of chance events in the career decision making process. It urged counsellors to teach clients to view unplanned events as opportunities for further exploration and growth rather than “ignoring or decrying the influence of chance events” (p. 123) within the process of forging a career.

### *Concepts and Assumptions*

Bandura refined social learning theory as it became apparent that learning and conditioning were only part of the complex array of psychological phenomena that influenced people. He began to place more emphasis on cognitive, self-regulatory and motivational process as his work evolved. Social learning theory was subsequently renamed social *cognitive* theory (Bandura, 1986) to reflect this more synthesized understanding of the interplay between “self-referent thought and social processes in guiding human behavior” (Lent et al., 1996, p. 376). It was this refined version of Bandura’s work upon which SCCT was founded. In fact, Lent and Hackett (1994) have referred to SCCT as their “career-specific elaboration of Bandura’s theory” (p. 83).

Although Krumboltz and colleagues shared “common theoretical lineage” (Lent et al., 1996, p. 377) with the developers of SCCT, the former are generally afforded less acclaim since they based their research on the earlier, less encompassing version of Bandura’s theory. On the other hand, SCCT has utilized well-defined constructs that have undergone rigorous consolidation through a prolonged history of research and testing in a variety of psychosocial domains. Indeed, social cognitive theory has gained an heuristic reputation in the fields of health behaviours, organizational management, and educational achievement (Bandura, 1986).

Essentially, SCCT goes beyond the acknowledgement of the impact of reinforcement history on career behaviour in four ways. It is more concerned with:

- 1) the specific cognitive mediators through which learning experiences guide career behavior;
- 2) the manner in which variables such as interests, abilities, and values interrelate;
- 3) the specific paths by which personal and contextual factors influence career outcomes; and it also emphasizes
- 4) the means by which individuals exercise personal agency

(Lent et al., 1996, p. 377)

The developers of SCCT therefore contend that it is false to assume that career behaviour is solely attributable to past learning experiences. They strongly emphasize intervening mechanisms within the learning process. In addition, the factors that influenced past learning outcomes and the means by which people regulate their own behaviour are given considerable attention (Lent et al., 1996). It is further emphasized that the self-regulatory system is dynamic and situation specific.

Social cognitive career theorists have adopted Bandura's (1997) conception of interaction called *triadic reciprocal causation* to explain how human agency operates. Internal personal factors, behaviour, and the external environment are the three determinants that are posited to influence each other bi-directionally. This notion of causality is perhaps a logical progression from the Person-Environment (P-E) fit conception that dominated career theory literature previously. This conception viewed behaviour simply as a result of the P-E transaction. Furthermore, the person in this transaction was viewed as comprising an aggregate of relatively static and global self attributes and, as such, did not take into account the dynamic nature of P-E interactions or the flexible nature of human functioning (Lent et al., 1994). More recently, within the context of the "cognitive revolution" with its emphasis on personal agency and situation specific transactions, social cognitive theorists still view the person and the environment as important determinants of behaviour. However, they also stress that human behaviour is rooted in particular social systems operating in unique environments.

Thus, these contemporary constructivist theorists have moved on from the earlier dualistic understanding of behaviour through their belief in the self-system, which is viewed as more than a mere “conduit for external influences” (Bandura, 1997, p. 6). According to SCCT, the self-system is both a producer of behaviour and a product of it. In other words, they propose that the thoughts and feelings people experience affect overt behaviour, and this influences the situation in which they find themselves. This subsequently affects their thoughts and feelings, which, in turn, affect their future actions (Lent et al., 1996).

### *Key Constructs*

The personal sector of the triadic reciprocal causation model represents the cognitive, affective and biological factors that operate as co-determinants of behaviour. SCCT specifies three principal social cognitive mechanisms that are used to conceptualize these personal elements, namely: a) self-efficacy, b) outcome expectations, and c) personal goals. These key variables are considered to be the most relevant factors to explain how people assert personal agency in relation to career development. They are referred to as the “building blocks of career development” (Lent et al., 1996, p. 380).

Bandura (1995) defined perceived self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (p. 2). Self-efficacy has been investigated in a plethora of studies resulting in the establishment of clear links between efficacy beliefs and a variety of spheres of performance (Sadri & Robertson, 1993). For example, self-efficacy has been found to be associated with work-related performance (Frayne & Latham, 1987), academic performance (Felson, 1990; Lent, Brown, & Gore, 1997; Lent, Brown, & Larkin, 1986; Lent, Lopez, & Bieschke, 1991; Schunk, 1989), task performance (Locke, Frederick, Lee, & Bobko, 1984), and computer use (Hill, Smith, & Mann, 1987). A brief summary of the empirical evidence for this construct as it applies to career-related performance will be provided later in this chapter.

Social cognitive theorists stress the dynamic nature of self-efficacy stating that it is not a static or passive trait, but rather one that varies according to specific performance domains. It is assumed to develop under the influence of four main

sources; experiences of success, vicarious experiences provided by social models, verbal persuasion, and judgements about one's reactions to stress and tension. Of these, Bandura (1995) contends that the most effective means of developing a strong sense of efficacy is via *mastery experiences*. Once people have successfully engaged in a particular activity they are provided with convincing evidence concerning their capabilities to perform it in the future. However, failures operate conversely by undermining efficacy beliefs. Strong efficacy expectations are considered essential for the initiation and persistence of behaviour in all aspects of psychological functioning. Furthermore, self-efficacy is considered the most influential factor mediating the process of human agency (Hackett & Lent, 1992).

The second personal causal mechanism within the triadic reciprocal model is labelled outcome expectations. This variable relates to the perceived consequences that people believe will result from the performance of certain behaviours (Lent & Hackett, 1994). In comparison to self-efficacy beliefs that pertain to perceived capabilities, outcome expectations concern the imagined repercussions of a particular course of action. Self-efficacy and outcome expectations are usually highly related due to the situation that “the types of outcomes people anticipate are determined primarily by their expected performance proficiency” (Maddux, 1995, p. 15). However, outcome expectations become an important unique predictor of behaviour when environmental constraints inhibit the influence of efficacy beliefs (Maddux).

Goals are characterised by a resolve to engage in a particular activity or to achieve a particular future outcome (Bandura, 1986). According to social cognitive theory, it is through the setting of goals that individuals co-ordinate, guide and sustain their own behaviour (Lent et al., 1996). Therefore, behaviour is not predetermined by a combination of past reinforcement, genes or other intervening personal factors. Actions are also motivated by the self-imposed goals that people use to motivate and regulate themselves. It is assumed that goals affect the development of efficacy beliefs and, in turn, self-efficacy and outcome expectations influence the goals that people choose along with the effort expended in their pursuit (Bandura).

### *Models*

The previous two sections of this review served to describe the underlying assumptions and constructs of social cognitive career theory. Accordingly, the major elements of this person-behaviour-situation interaction have been outlined along with the bi-directional way in which social cognitive theorists view them as operating upon one another over time. Social cognitive career theorists have presented their conceptualization of career development using three interlocking models depicting the directional paths of the intervening variables deemed most pertinent to career-related behaviour. These models, in the tradition of Super's (1990) segmental models of career development processes, are designed to represent the social cognitive framework in terms of three crucial career-related processes. Each model concisely delineates: a) how career and academic interests develop, b) how choices are made, and c) how performance outcomes are achieved (Lent et al., 1994).

#### *Interest Model*

The first model provides a schematic representation of the cognitive and behavioural influences posited to affect the differentiation and development of career-related *interests* in childhood and adolescence (Lent & Hackett, 1994). Social cognitive career theorists contend that exposure to one's particular environment brings with it certain activities that have career relevance. Furthermore, they believe that it is the way in which particular activities are differentially reinforced that determines whether interests are pursued. If repeated practice leads to satisfactory achievement and positive feedback from significant others, interests are substantiated. Thus, particular interests are promoted through the refinement of skills, performance standards and efficacious expectations about the outcomes of their pursuit (Lent & Hackett). In other words, people acquire enduring interests in the activities that they feel efficacious toward (Bandura, 1986).

This model of how basic career interests develop depicts eleven predominant pathways through which interests are proposed to evolve (Lent & Hackett, 1994). For example, the model illustrates the intervening influence of self-efficacy and outcome expectations on interest development. Likewise, it depicts activity selection

and practice as influencing particular performance attainments which, in turn, function as mediators to the revision of self-efficacy and outcome expectancy appraisals (Lent & Hackett). SCCT has nominated twelve theoretical propositions anchored to the three models (Lent et al., 1994). The first two propositions were concerned with the interest model since they pertain to interests and their connection with self-efficacy beliefs, outcome expectations as well as occupationally relevant abilities (Lent et al., 1994).

### *Choice Model*

The second model, which illustrates the factors proposed to affect career-related *choice* behaviour, is associated with proposals 3 to 7 inclusive (see Appendix A). These hypotheses speculate about the links between self-efficacy beliefs, outcome expectations and choice goals and actions that are consistent with primary interests (Lent et al., 1994). The authors of SCCT refer to this model as “a developmental extension of the process of basic interest formation” (Lent & Hackett, 1994, p. 88). Thus, it incorporates the principal causal paths of the first model although the goal, activity and performance outcome variables relate specifically to career/academic choice goals and their enactment (Lent & Hackett). It is important to note that SCCT maintains that career interests, choices, and performances are “conceptually and developmentally related” (Lent et al., 1996, p. 382) to similar academic processes. As such, the models subsume these two sets of processes in a bid to make stronger connections between academic and career development.

The career choice model is arranged into three conceptually distinct integral processes (Lent & Hackett, 1994). These are: a) the acquisition of a fundamental career goal or choice from amongst a set of primary career interests, b) the expending of effort to execute the choice, and c) the ensuing performance outcomes. The process of triadic reciprocal causation is evident in that these three component parts of the choice model form a feedback loop that has been proposed to affect the configuration of future career behaviour. Moreover, the distinction between goals and actions is highlighted in this model to emphasize the role of personal agency in the choice-making process. This feature illustrates the dynamic nature of career choice behaviour and serves to elucidate particular variables and decisional points

that may prove beneficial as targets for intervention (Lent et al., 1996). In addition to the cognitive and behavioural determinants outlined in the model, the effects of “a variety of other person and contextual variables on career outcomes” (Lent & Hackett, p. 90) have been included. Aspects of the physical, social, and cultural *environment*, career-relevant *learning experiences*, and inherited *person* inputs (affective and physical attributes) embody the potential limitations on an individual’s free agency when making career choices (Lent et al.).

### *Performance Model*

The *performance* model “is concerned with the level (or quality) of people’s accomplishments as well as with the persistence of their behavior in career-related pursuits” (Lent et al., 1996, p. 394). Once again, the key variables of self-efficacy, outcome expectations and goals figure prominently in the direct and indirect determination of performance outcomes. In addition, *ability*, measured by “achievement, aptitude, or past performance indicators” (p. 394) is considered an influential variable affecting performance outcomes via its impact on self-efficacy beliefs and outcome expectations (Lent et al.). According to SCCT, people who have acquired a strong sense of efficacy and who forecast positive outcome expectations set more challenging goals for themselves, which contribute to the instigation and perseverance of performance behaviour. Hence, what people accomplish is partly determined by their interpretation and application of their abilities (Lent et al., 1994).

This model provides an explanation for varying performance outputs by people with similar ability levels. For example, individuals are predicted to experience difficulty when they have seriously underestimated their efficacy despite high ability levels. In these situations, people are prone to abandon efforts more easily, set lower performance goals, struggle with incapacitating performance anxiety, and evade challenges that they would otherwise be capable of achieving (Lent et al., 1996). Just as problematic, according to SCCT, is the situation in which people grossly overestimate their self-efficacy. This tends to lead them to approach tasks that they are actually incapable of accomplishing and thus, failure and despondency are more likely to be experienced.

*Empirical Support for the Social Cognitive Career Theory Models*

Qualitative reviews (Betz & Hackett, 1986; Hackett, 1995; Hackett & Lent, 1992; Lent & Hackett, 1987) of the literature based on the assertions of SCCT have yielded a great deal of supportive evidence for the models of career interest, choice and performance. In general terms there are three conclusions that can be drawn as a consequence of the studies undertaken:

- 1) domain-specific measures of self-efficacy are predictive of career-related interests, choice, achievement, persistence, indecision, and career exploratory behavior;
- 2) intervention, experimental, and path analytic studies have supported certain hypothesized causal relations between measures of self-efficacy, performance, and interests; and
- 3) gender differences in academic and career self-efficacy frequently help explain male-female differences in occupational consideration.

(Lent et al., 1996, p. 397)

Meta-analytic examinations (Coon-Carty, 1995; Lent et al., 1994; Multon, Brown, & Lent, 1991; Sadri & Robertson, 1993) have also accumulated support for some of SCCT's propositions by indexing the statistical strength of hypothesized relations across all studies that have investigated the relationships posited. It is important to note, however, the authors of SCCT state that certain predictions remain relatively unexplored and require further investigation. For example, the roles of gender, ethnicity, and contextual factors have been specified as important variables that need to be scrutinized in conjunction with the social cognitive variables. Additionally, a deficiency in studies of "the effects of interventions derived from SCCT" (Lent et al., 1996, p. 400) has been uncovered.

Nevertheless, the meta-analyses listed above have provided support for the assumptions that:

- 1) interests are strongly related to one's self-efficacy and outcome expectations, performance accomplishments in a specific endeavor will lead to interests in that endeavor to the extent that they foster a growing sense of self-efficacy,

- 2) self-efficacy and outcome expectations affect career-related choices largely (though not completely) through their influence on interests, and
- 3) past performance affects future performance partly through people's task mastery abilities and partly through the self-efficacy percepts they develop, which presumably help them to organize their skills and persist despite setbacks.

(Lent et al., 1996, p. 400)

### *Empirical Support for Career Self-Efficacy*

Before this review of SCCT is complete a brief overview of the empirical evidence for its central construct, career self-efficacy is required. For a more comprehensive coverage of the career self-efficacy literature the reader is directed to reviews by Betz and Hackett (1986), Hackett (1995), Hackett and Lent (1992), Lent and Hackett (1987), and Sadri and Robertson (1993).

Hackett and Betz (1981) were the first to apply Bandura's (1977) suppositions about self-efficacy to career behaviour in a seminal study of women's career development. They concluded that personal efficacy expectations were effective in accounting for the disadvantaged status of women within the work force due to differential socialization processes experienced by men and women (Hackett & Betz). Furthermore, Hackett and Betz proposed that career decisions, achievements, and adjustment behaviours were subject to the influence of self-efficacy beliefs in both men and women.

Much of the subsequent work on career self-efficacy has centred upon the avenues for future research presented by Hackett and Betz (Hackett & Lent, 1992). These include, firstly, investigations of the relationship between career self-efficacy and career choice/decision-making (e.g., Blustein, 1989; Niles & Sowa, 1992; Rotberg, Brown, & Ware, 1987; Taylor & Betz, 1983; Taylor & Popma, 1990). For instance, using multiple regression analysis on a sample of 203 female and 204 male college students, Taylor and Popma corroborated previous research by demonstrating a moderate negative relationship between career decision-making self-efficacy (CDMSE) and vocational indecision. The obtained correlation coefficient of  $r = .54$ , which accounted for 29% of the variance in indecision scores, established CDMSE

as the only variable to make a statistically “significant contribution to the prediction of vocational indecision” (Taylor & Popma, p. 26). Correspondingly, CDMSE has been demonstrated to affect the extent of career exploratory behaviour undertaken (Blustein). People with greater confidence in their decision-making capabilities tend to be more actively engaged in career information gathering and consideration of career options (Hackett, 1995).

A second avenue of research on career self-efficacy has examined gender differences (e.g., Betz & Hackett, 1981; Betz, Harmon, & Borgen, 1996; Church, Teresa, Rosebrook, & Szendre, 1992; Lent, Brown, & Larkin, 1986). One of these studies (Betz & Hackett) found that, although the sample of 235 college undergraduates exhibited the same ability levels, females reported significantly lower efficacy for non-traditional (30% or less women employed) than traditional occupations (70% or more women employed). Whereas, the males’ efficacy expectations were the same for occupations no matter whether they were traditionally chosen by males or not. Similarly, Church et al., using a sample of 85 minority high school equivalency students, found both men and women experienced stronger self-efficacy beliefs in relation to occupations dominated by their own gender. This pattern of gender differences was in evidence when data were analysed at an aggregate level or at the level of specific occupations (Hackett & Betz, 1995).

There have also been numerous investigations of mathematics self-efficacy and its effect on choice of science-based college majors and subsequent career choice (e.g., Betz & Hackett, 1983; Hackett, 1985; Hackett, Betz, O’Halloran, & Romac, 1990; Lent, Lopez, & Bieschke, 1991; Matsui, Matsui, & Ohnishi, 1990). Mathematics self-efficacy was reportedly higher for men than women across all studies with general consensus that past performance accomplishment in the maths/science domain was the most crucial source of efficacy information to influence the strength of mathematics self-efficacy.

Two comprehensive meta-analytic studies have examined the facilitating relationship of self-efficacy beliefs to academic performance and persistence (Multon, Brown, & Lent, 1991) and the relation of self-efficacy to occupational performance (Sadri & Robertson, 1993). Remarkably similar findings were revealed (Lent et al., 1996). Multon et al. combined data collected from a total of 4,998 participants over 38 studies and procured unbiased effect size estimates of .38 for

performance and .34 for persistence. Fourteen percent of performance variance was explained by self-efficacy (Multon et al.). Likewise, in their review and meta-analysis, Sadri and Robertson found positive relationships between self-efficacy and work-related performance ( $r = .36$ ) and behaviour choice ( $r = .30$ ) using a total of 1,658 adult participants.

Much of the research adopting the self-efficacy approach to the study of adolescent behaviour has entailed investigation of academic achievement. Shunk (1989), for example, has endeavoured to discover “how self-efficacy functions as a predictor of achievement behaviors” (p. 14). While Meece, Wigfield and Eccles (1990) have examined why “students of both sexes, but particularly women, do not attain a high level of mathematical competency”, and how students can be dissuaded from “discontinuing their mathematical training early in high school” (p. 60). Further research ascribing to the self-efficacy model has studied risk and resilience in adolescents. The authors of one such paper (Spencer, Cole, DuPree, Glymph, & Pierre, 1993) examined “youths' perceptions of their contexts, coping strategies, identity processes, and achievement outcomes” (p. 719). Their sample comprised 562 African American adolescents who were growing up in high-risk environments. They used the data gathered to try to suggest ways to prevent or intervene in the incidence of problem behaviour. Specific coping methods and abilities were seen to be vital.

Yet another slant to the examination of adolescent behaviour using self-efficacy theory concerned notions of personal mastery, goal setting and a sense of perceived control. It was postulated that, with an efficacious outlook, teenagers may be more likely to face difficulties positively and set appropriate and challenging goals for themselves. Berry and West (1993) reviewed empirical studies of cognitive self-efficacy from childhood through to old age. They recommended the application of self-efficacy to the study of cognitive development across the life span. However, they concluded that much more research is needed in this area to fully understand the patterns of self-efficacy development.

Self-efficacy intervention studies have also been portrayed as a sphere of social cognitive theory that requires more systematic research attention. Indeed, Hackett (1995) maintained that “theory-based interventions designed to enhance academic *and* career efficacy beliefs are crucial” (p. 249). Moreover, Lent et al. (1996) contended that targeting adolescents during their school years, when their self-

perceptions and vocational beliefs are relatively flexible, may be the most beneficial period for facilitating helpful efficacy. Investigations that have sought to find ways to improve career search self-efficacy (e.g., Betz, 1992; Fukuyama, Probert, Neimeyer, Nevill, & Metzler, 1988; Solberg, Good, & Nord, 1994) have provided a promising avenue “ripe for applications and intervention programming” (Solberg et al., p. 63). However, to this author’s knowledge, no career intervention studies designed specifically to enhance career search self-efficacy have been published at this stage.

On the contrary, many reviews of career self-efficacy provide guidelines on how to facilitate mastery experiences, observational learning, anxiety management and verbal persuasion to foster efficacious beliefs about career decision-making and career search activity (e.g., Betz; Hackett, 1995; Lent & Hackett, 1987; Solberg et al., 1994). These suggestions are based on the extensive empirical evidence that has accumulated for career self-efficacy. For example, career self-efficacy has been shown to be predictive “of a wide range of career-related behaviors from early high school through college and beyond” and self-efficacy for career decision making has been established as a useful construct to understand “the process of career decision making and the problems that may interfere with students’ ability to make decisions” (Hackett, p. 247). Nevertheless, the suggestions that have been repeatedly proposed concerning the practical application of career self-efficacy, require formal testing. Research on career self-efficacy needs to be extended to discover “how these beliefs can best be modified clinically and educationally, and how they may interact with other key person and environmental variables to facilitate or constrain career development” (Hackett & Lent, 1992, p. 436).

### *Summary*

The profusion of research investigating the social cognitive framework set down by Lent, Brown, and Hackett in 1994, has made a substantial impression on the field of career development. This is evidenced, not only by the number of published research studies based on SCCT, but also by the sagacity of the empirical findings reported. Indeed, “support for the propositions outlined by SCCT is strong and growing” (Swanson & Gore, 2000, p. 247). Much of the early work centred upon the role of career self-efficacy beliefs and how these influence the development of

interests, choice behaviours, and performance in academic and career-related pursuits. More recently, there has been a focus on the application of theory (e.g., Chartrand & Rose, 1996; Lent, Hackett, & Brown, 1999; O'Brien & Heppner, 1996) and investigations of the influence of contextual variables on career development (e.g., Flores & O'Brien, 2002) are beginning to gain impetus. In particular, perceptions of barriers and supports have stimulated research interest of late (e.g., Lent et al., 2001; Lent, Brown, & Hackett, 2000; Lent et al., 2002).

### Career Development Research in Australia and New Zealand

In order to provide a regional context for the present thesis, research conducted in Australia and New Zealand for the period from 1995 to 2000 was reviewed. The reader is directed to a recent Oceania edition of the *International Journal for Educational and Vocational Guidance* wherein this thorough examination of the pertinent literature was published (Prideaux & Creed, 2002). The excerpts provided below depict some of the key issues to emanate from this review.

Specific criteria were laid down to demarcate the boundaries for this review. The studies accepted had to demonstrate sound methodology and clearly describe the systematic collection of data and testing of hypotheses. The identified articles were then categorized according to the main focus for each. The review was organized in this way to acquaint the reader with the specific sub-domains that have received research attention. Each category therefore, reflected the realm of evidence gathered from 1995 to 2000 in Australia and New Zealand in each sub-domain of interest. These were: Tests of career development theory, Tests of career development constructs, Career-related decisions, Gender differences, Cultural comparisons, Tests of career programs for children, and Career development training for adults. Most of the groupings consisted of approximately nine articles, although several categories (e.g., Tests of Theory, Cultural Comparisons) contained fewer studies.

The first conclusion to be drawn from this review process was that career development research in Australia and New Zealand is both diverse and thriving (Prideaux & Creed, 2002). Yet, contrary to Stead and Watson's (1998) contention that American theories of career development are not universally applicable, Australian and New Zealand researchers have not appeared to have been as

concerned that such theories, constructs and tools are applied uncritically to people in this part of the world (e.g., Smart & Peterson, 1997). Undoubtedly, this critique is yet to be adequately tested and future work will need to focus purposefully on the models and assessment methods currently being utilised.

The second conclusion to emanate from the review was that career decision-making research in Australia and New Zealand needs to be expanded. In particular, the key decision-making points for adolescents in these two countries need to inform the context for career choice behaviours (e.g., Hesketh & Whiteley, 1995). Findings in this area also indicate that students' unrealistic career aspirations warrant attention (e.g., Albion, 2000).

An appraisal of the gender studies revealed common findings. Boys were drawn to mathematics and science more than girls (Watt, 1996), and girls were found to demonstrate a more flexible approach to career planning than boys (e.g., Carpenter & Inkson, 1999). The prevalence of gender stereotyping of careers amongst children also persists (e.g., McMahon & Patton, 1997). Adult males were less involved in home duties than women (Poole, Nielsen, & Skoien, 1995), and the dilemma for women over the stressors associated with combining work and family roles was most salient (e.g., Alderton & Muller, 2000).

The studies of cultural differences, while in short supply, provided some important information about the difficulties faced by minority groups such as Maoris in New Zealand (Lysaght, Tuck, & Adair, 1999), Aboriginal females (Gool & Patton, 1999) and people from non-English-speaking backgrounds in Australia (Fan & Antoine, 1999). These groups generally appeared more disadvantaged as to employment opportunities.

The review also revealed clear imperatives for proficient career education programs to be designed, tested, and implemented. Strong indications emerged accentuating the need for coherence of career service delivery across all States of Australia (e.g., McCowan & Hyndman, 1998). The evaluation of career development training for adults also requires more scrutiny in order to improve the situation for groups such as the unemployed and those with disabilities (Creed, Machin, & Nicholls, 1998). Workplace based evaluations are in their infancy and more field examinations of the efficacy of programs within local contexts are required (e.g., Hesketh, 1996). Indeed, an expansion of career counselling services and adequate

training for its practitioners within Australia and New Zealand are an imperative (Patton, 2000).

This review revealed additional implications for career practitioners beyond this fundamental need for the upgrading of their training and services. Overall, it became evident that practitioners need to adopt a collegial approach with researchers. This would assist the extension of theoretical knowledge by giving it contextual grounding, and lead to better theoretically guided practice. Career development practitioners may also benefit from staying abreast of the latest research findings to guide them when revising outmoded procedures. For example, gender differences found in the studies reviewed may inspire the development of separate programs tailored to the disparate needs of male and female students. While this theory/practice model has implications for career development practitioners, it also implies that career development researchers need to supplement their work by going beyond the confines of their university precincts with university convenience samples and conduct research in the field.

Finally, it was acknowledged that many highly informative articles did not meet the criteria for inclusion in the review. These were generally case studies or reports of a descriptive nature that nonetheless made enlightened contributions to the field. Readers were directed to the “Special Feature” and “Case Studies” sections of recent issues of the *Australian Journal of Career Development* for samples of this literature.

## Career Education Policy and Practice

### *Current Context*

In recent times, the career development literature has highlighted the sweeping changes that are taking place in the world of work (e.g., Blustein, 1999; Gillies, McMahon, & Carroll, 1998; Irving & Raja, 1998; Peterson & Gonzalez, 2000; Savickas, 1996; Watts, 1996). Without a doubt, employment opportunities are now vastly different due to a myriad of contributing factors, including rapid technological advancements, downsizing, outsourcing, process re-engineering, and the global economy (Herr, 2000; Irving & Raja, 1998; Schermerhorn, Hunt, & Osborn, 1994).

This rapidly changing work environment necessitates a new conception of careers. Specialists in the field now look upon career development as a lifelong process with many ups and downs. Indeed, many authors predict that in the future, people will need to be prepared for several career changes in their lifetime along with periods of unemployment (e.g., McMahon, 1997; Watts). Furthermore, the future workforce will need to be multi-skilled with individuals having a strong sense of personal responsibility, and the ability to use initiative in a variety of circumstances (Irving & Raja; Lapan & Kosciulek, 2001). People will also need to take full advantage of all lifelong learning opportunities (Kemp, 1998; Patton & McMahon, 2001; Sweet, 2001).

In the earlier part of last century, most people were simply making choices about what job they would like to do for the duration of their working lives. As the 21<sup>st</sup> century unfolds, however, careers are much more complex and fluid entities. Thus, the traditional concept of career as a “job for life” has altered and many contemporary theorists are rightly stressing the need for research to take into account the fluctuating state of the world of work. This “profound revolution in the nature and structure of work” (Watts, 1996, p. 41) has also meant that career development activity, which includes both counselling and education programs, has taken on a much more extensive role. Today’s social, political, and economic contexts greatly influence the practice of career counselling. Consequently, the psychological foundation of this endeavour is being challenged to extend its boundaries and acknowledge that it is now “a deeply sociopolitical activity” (Watts, p. 41). Furthermore, Watts contends that “giving new meaning to the concept of career is one of the keys to economic success and social harmony in the new postindustrial society” (p. 41). Increased attention from sociopolitical sectors has led to a push for more fully implemented and comprehensive career programs (e.g., Patton, 2000). In addition, practitioners are being asked to “be in the vanguard of understanding these forces [affecting the world of work] and adapting creatively to them” (Watts, p. 41).

*Development in Career Education Practice*

Given this context, the school-to-work transition process that students face today is typically characterised by complexity and multiple pathways that can give rise to confusion, indecision and, in some instances, apathy. There are perhaps greater imperatives now than ever before for proficient career education programs to be designed, tested, and implemented. Indeed, Blustein (1999) contends that “the transition [from school to work] can be significantly facilitated or inhibited by one’s access to supportive individuals and institutions” (p. 350) and, presumably, the programs conducted by them. However, according to Hansen (1999), counter to predictions of “the end of the ‘job’ and the end of ‘work’... career development specialists [may be] preparing students with skills that may not be needed and jobs that may not exist” (p. 354). Clearly, career guidance counsellors must be cognizant of the situation students currently face with regard to the changing world of work. In particular, their work should reflect an understanding of the reality that “skills demands of the future will be fundamentally different from those of the past and, in many respects, even the present” (Irving & Raja, 1998, p. 28).

Career education originally emerged during the early 1970s as a means to integrate formal education with career development (Baker & Taylor, 1998). It began as a system of interventions targeting children and adolescents to help them acquire “knowledge, skills, and attitudes for making work meaningful and satisfying” (p. 376). More recently, career education specialists have been calling for the development of national career counselling and development guidelines (Zunker, 1998), kindergarten to Year 12 career education programs (McMahon & Carroll, 1999), national career advisory systems (McCowan & Hyndman, 1998), as well as “curriculum units, career centers, [and] exploratory work experience” (Hansen, 1999, p. 356).

Understandably, deciding exactly what works, that is, what specific career education initiatives achieve the goal of enhancing the school-to-work process of all students, is proving to be a very difficult undertaking. Very few specific career education interventions have been objectively evaluated. In their meta-analysis, Baker and Taylor (1998) could find only twelve experimental or quasi-experimental studies of career education interventions with child or adolescent participants

published between 1983 and 1996. Of these, all were found to have modest effects but, considering the problems associated with conducting sound research in this domain, Baker and Taylor proposed that “these modest effects may be viewed as encouraging” (p. 382). They further speculated that the relatively small number of studies assembled may indicate under-representation in this area of applied research. It is interesting to note at this point that Osipow and Fitzgerald (1996), in their discussion of a meta-analysis of 55 career counselling studies undertaken by Spokane and Oliver in 1983, announced: “One very startling positive conclusion they reached ... [was] that clients receiving almost any kind of career intervention are, on the average, better off than more than 80% of untreated control group subjects” (p. 304). In their subsequent meta-analysis of 58 career interventions, which examined outcomes in greater depth, Oliver and Spokane (1988) again found generally positive outcomes although effect sizes differed according to certain characteristics of the intervention. These included the number of participants and intervention hours.

#### *Career Education Policy*

Adolescents currently attending Australian high schools are encountering career education and guidance initiatives that are attempting to meet the projected needs of the next millennium (Kemp, 1997). Government departments such as the Department of Education, Employment, Training and Youth Affairs (DEETYA), as well as research councils, have investigated the ways in which careers, and subsequent skill requirements, may vary in the future (e.g., Australian Education Council Review Committee, 1991; DEETYA, 1995; Dusseldorp Skills Forum, 1998). These studies have been undertaken to inform the development of policies and programs that are responsive to changes “in the nature and structure of the Australian economy and society” (DEETYA, p. 1). In particular, Vocational Education and Training (VET) has been advocated to provide students with links between schools and industry that are just as serviceable as the traditional tertiary education pathways have been in the past (Dumbrell, 2000). Furthermore, access to career counselling that embraces a broader view of the counselling process and a wider network of career options and advice has been promoted (Kemp).

Additionally, a steady progression of documents featuring career education has been published by government bodies since 1989 (McCowan & McKenzie, 1994). These included the identification of national goal statements for education by the Ministers of Education in 1989, and a discussion of curriculum and guidance initiatives by the Working Party on Careers Education in 1999. In 1991, the Commonwealth Department of Employment, Education and Training (DEET) commissioned a feasibility study concerning the formulation of a system to disseminate career information (McCowan & McKenzie). In the same year, the Business Council of Australia reviewed endeavours, particularly curriculum developments, aimed at linking business with schools. Furthermore, the National Board of Employment, Education and Training in association with the Business Council of Australia, conducted “a forum on career education in schools and careers advisory services in higher education” (McCowan & McKenzie, p. 6) during 1991. A taskforce was also assigned to formulate strategies to provide career education advice and information for all groups of students by the Ministerial Council on Education, Employment, Training and Youth Affairs in 1994 (McCowan & McKenzie). This council has since documented national goals for schooling for the 21<sup>st</sup> century stressing the importance of vocational education and training for students to acquire, for instance, career-related skills, as well as an understanding of the changing work setting, multiple career options and pathways (Ministerial Council for Employment, Education, Training and Youth Affairs, 1999).

#### *The Impact of the Discourse on Career Education Requirements*

The initiatives listed above do not represent a complete inventory of the range of career education related projects that have been carried out in Australia, however, they serve to illustrate the high profile career education has been given in terms of government discourse over recent years. However, despite these and other important enterprises, it appears to be having little tangible impact on career education at this stage. Indeed, according to McCowan and McKenzie: “In real terms, despite intense interest in it, career education has received scant attention in the major curriculum reforms across Australia” (1994, p. vi). Likewise, Patton and McMahon (2001) maintain that: “The many government policies and reports have not translated into a

consistent national practice in education, training and employment services” (p. 7). Furthermore, Bessant (2002) argued that “while much of the rhetoric about the contemporary role of education talks about embracing change, what we witness involves a resistance to change” (p. 31).

In a practical sense, government policy does not seem to have had positive benefits either. The incidence of youth unemployment is proportionately higher than unemployment in all other age groups in Australia today (McClelland, Macdonald, & MacDonald, 1998). Towards the end of last century, teenagers and young adults represented a large proportion of the total unemployed population (Australian Bureau of Statistics, 1997). This remains the case with current figures showing that “the unemployment rates for 15-19 year olds (22.5%) and 20-24 year olds (10.5%) looking for full-time work were higher than the average for all age groups (6.6%).” (Australian Bureau of Statistics, 2002, p. 2). The number of teenagers in Australia holding full-time jobs halved from the mid 1980s to the mid 1990s (Sweet, 1998). In addition to the reduction in full-time positions, participation by youth in part-time employment, traineeships, and apprenticeships showed no increase during the 1990s despite government policy and public expenditure priorities (Sweet). There was also a fall in school retention rates during the 1990s with a greater impact on males than females (Ainley, 1998). According to a recent scoping paper produced by the Queensland Government (2002): “Approximately 77% of students stay at school in Queensland to Year 12, leaving a substantial number of students, some 11,000 per annum, not completing school to Year 12” (p. 2). Hence, around “15% of 15-19 year olds are neither in full-time education nor in full-time work” (Sweet, 1998, p. 6).

High levels of unemployment have a threefold effect. Not only does the experience of being unemployed lead to personal difficulties such as diminished confidence, coping ability, and general well-being (Creed et al., 1998), unemployment is also inextricably linked with the social fabric of entire nations (Watts, 1995). For example, divisions between securely employed, poorly protected or self-employed, and those who are unemployed are professed to “threaten a decline into an evermore selfish, splintered, and violent society” (Watts, 1996, p. 43). Finally, unemployment has a detrimental economic impact by affecting the capacity for competitiveness of countries within a global marketplace. Unfortunately, an ‘incomplete education’ has been defined as the key factor that places the young

person ‘at risk’ of unemployment ... [and] is said also to place the young person ‘at risk’ of other social ills like psychological depression, juvenile crime, suicide homelessness, drug abuse, etc. (Bessant, 2002, p. 34).

### *Summary*

To reiterate, the career prospects of young people today are very different from those of previous generations and, no doubt, Australian’s youth are facing a precarious future within an employment system that is becoming ever more complex and unpredictable. The traditional concept of career as a “job for life” is disappearing and consequently, pathways to employment are becoming less predictable. Political and theoretical rhetoric has espoused the need for more comprehensive career counselling programs and it is generally accepted that, more than ever before, career counselling needs to equip students with the confidence and skills necessary to put them in command of their own futures. However, despite the rhetoric, in practice, career education remains disjointed and “has largely occurred on an ad hoc basis at a school level” (McMahon, 1997, p. 137). Moreover, in a review of Australian career activity relating to VET (McCowan & Hyndman, 1998) the deregulated and unstructured approach that currently exists was criticized. Many recommendations were made for young people to “successfully transverse multiple pathways” (p. 37), including the need for specific career related research grants to “identify inadequacies and promote innovative strategies to address identified needs” (p. 40). Indeed, these authors maintained that satisfactory career decision-making skills and option planning are even more critical when job pathways are complex. They further contend that career counselling must be delivered with “deliberate intention [to achieve] major gains not only for individual Australians but also for the country itself” (p. 40).

### Career Education Intervention Evaluations

Despite widespread acknowledgement of the importance of career development education to assist students in their complex transition from school to work, very few

specific career education interventions have been objectively evaluated. Indeed, there is a conspicuous shortfall in the career development literature with regard to methodologically sound career intervention studies carried out in actual high school settings. A detailed review of 30 evaluations of career education interventions undertaken during the final quarter of last century was produced as part of the review process for the present thesis. The reader is directed to the publication of this body of work in the *Swiss Journal of Psychology* (Prideaux, Creed, Muller, & Patton, 2000). A summary of the methodological and theoretical issues that resonated from the review of these studies is presented below. Table 2.1 provides a synopsis of the specific attributes of each of the interventions that were scrutinized.

Two principal issues emerged from this review of career intervention studies. First, although there appears to be a general acceptance of the need for investigations to have a sound theoretical foundation, many studies did not comply with this convention. This is unsatisfactory, especially in light of comments such as Hansen's (1999) that: "When career education was introduced in 1971, it gave a big boost to career activities in schools, but it was also atheoretical" (p. 355). As career development theorists and career counselling practitioners begin their work in the 21<sup>st</sup> century, it is hoped that the wealth of knowledge and experience gained during the previous century can be utilised in a more synchronous manner. Indeed, Herr (1999) argues that "theories offer a vantage point from which to understand and facilitate the school-to-work transition and have the potential to bring a coherent conceptual base to the evolution of school-to-work programming efforts" (p. 359).

The second issue of concern regarding the evaluation of career interventions is methodological. It is vital that studies are designed in such a way as to allow inferences to be made and sound conclusions to be drawn. Purely descriptive analyses or single group post-test designs, while somewhat informative in a specific situation, provide little information for other researchers or practitioners to build further work upon.

Table 2.1

*Summary of Career Intervention Studies*

| Authors                 | <i>n</i> | Sample | No. measures used | Theory explicit in program | Pre-test, post-test | Control group |
|-------------------------|----------|--------|-------------------|----------------------------|---------------------|---------------|
| Ball & Jordan (1997)    | 95       | Uni    | 4                 | no                         | yes                 | no            |
| Brook (1992)            | 1        | Adult  | 1                 | yes                        | no                  | no            |
| Chartrand & Rose (1996) | 60       | Adult  | 0                 | yes                        | no                  | no            |
| Dunn & Veltman (1989)   | 22       | HS     | 1                 | no                         | yes                 | no            |
| Flake et al. (1975)     | 36       | HS     | 1                 | no                         | yes                 | yes           |
| Fouad (1995)            | 81       | HS     | 2                 | no                         | yes                 | yes           |
| Fukuyama et al. (1988)  | 77       | Uni    | 2                 | no                         | yes                 | yes           |
| Gillies et al. (1998)   | 107      | < HS   | 5                 | yes                        | yes                 | yes           |
| Jones (1993)            | 221      | HS     | 4                 | yes                        | no                  | yes           |
| Kush & Cochran (1993)   | 64       | HS     | 5                 | yes                        | yes                 | yes           |
| Lapan et al. (1993)     | 166      | HS     | 5                 | no                         | yes                 | no            |
| Lapan et al. (1997)     | 22,964   | HS     | 6                 | no                         | no                  | no            |
| Laskin & Palmo (1983)   | 132      | HS     | 3                 | no                         | yes                 | yes           |
| Loughead et al. (1995)  | 58       | HS     | 5                 | no                         | yes                 | no            |
| Luzzo et al. (1996a)    | 60       | Uni    | 3                 | yes                        | yes                 | yes           |
| Luzzo et al. (1996b)    | *37      | Uni    | 2                 | yes                        | yes                 | yes           |
| Luzzo et al. (1999)     | 94       | Uni    | 7                 | yes                        | yes                 | yes           |
| Luzzo & Pierce (1996)   | 38       | HS     | 1                 | no                         | yes                 | yes           |
| Luzzo & Taylor (1998)   | 88       | Uni    | 1                 | yes                        | yes                 | yes           |
| Munson (1994)           | 42       | HS     | 3                 | yes                        | yes                 | yes           |
| O'Brien et al. (1999)   | 57       | < HS   | 4                 | yes                        | yes                 | no            |
| Palmer & Cochran (1988) | 40       | HS     | 3                 | yes                        | yes                 | yes           |
| Remer et al. (1984)     | 74       | HS     | 8                 | yes                        | yes                 | no            |
| Sampson et al. (1992)   | 107      | Uni    | 1                 | yes                        | no                  | yes           |
| Savickas (1990)         | 209      | HS     | 2                 | yes                        | yes                 | yes           |
| Speight et al. (1995)   | 45       | HS     | 3                 | yes                        | yes                 | no            |
| Taylor (1997)           | #0       | Uni    | 0                 | yes                        | no                  | no            |
| Taymans et al. (1990)   | 40       | HS     | 2                 | no                         | no                  | no            |
| Van Buren et al. (1993) | 986      | HS     | 1                 | yes                        | yes                 | yes           |
| Weeks & Porter (1983)   | 48       | < HS   | 1                 | yes                        | yes                 | yes           |

Note 1: "Uni" = university student sample, "HS" = high school sample, "< HS" = under high school age.

Note 2: \* In this investigation, two studies were conducted with  $n = 36$  and  $n = 38$  respectively. The average number of participants is reported.

Note 3:  $n = 0$  for Taylor (1997) as this was a descriptive paper with no participants or testing involved.

In accord with previous examinations (e.g., Osipow & Fitzgerald, 1996), the present review (Prideaux et al., 2000) demonstrated that career intervention studies appear to display almost unanimous support for the provision of some kind of career counselling or education for both adolescent and adult samples. Programs that aim to assist people in a variety of career-related activities including career decision making, career exploration, career maturity, and career self-efficacy have generally shown positive effects. Indeed, theorists and practitioners can be optimistic about the benefits of designing and conducting career education interventions given the broad and supportive findings identified. It is appropriate, however, to lend some rigour and organisation to this promising endeavour.

First, it was recommended that future research be conducted with sound experimental methodology. Weak designs need to be avoided so that control over alternative explanations is maintained and inferences may be confidently drawn. In this way, theory can be extended in an efficient and productive manner. Second, the measurement instruments utilised should be reliable and fortified by “strong psychometric support... rather than relying on newly developed measures” (Luzzo, et al., 1999, p. 241-242). In this way, replication studies may be carried out and provide further opportunities for theory to be extended and validated.

It is also to be accepted that a strong theoretical foundation should underlie all investigations of career intervention. Researchers must be cognizant of the malleable nature of the world of work and the need for theory to “keep up”. Rapid change presents many challenges. Unfortunately though, “many theories have become taken for granted and embedded in the syllabus” (Collin, 1996, p. 75), and do not address the current and projected needs of policy makers or clients when the world of work is changing. Moreover, Collin contended that theory “has often been too refined for practical application” (p. 75). Successful science, according to Borgen (1991), “especially if it is to be used by practitioners, often rounds off the complex corners of reality” (p. 274). Hence, it is vital for the field to develop theory that is applicable within the fluctuating “social, political and economic contexts of work “ (Savickas, 1996, p. 3).

Finally, it was suggested that high school students (and perhaps even younger students) would be more appropriate populations to target since college or university samples have presumably already undergone various career development processes.

Lent, et al. (1996) contended that targeting adolescents during their school years, when their self-perceptions and vocational beliefs are relatively flexible, might be the most beneficial period for facilitating helpful efficacy. Furthermore, by using convenience samples taken from college or university populations, researchers limit the generalisability of their results. Ten of the 30 career education intervention studies reviewed had participants drawn from a narrow sample of adults attending college, university or a correctional institution. The findings from these studies may not be applicable, for example, to young adults who found jobs or were unemployed after high school.

This highlights one of many fundamental questions relating to the practice of career intervention. There is no way of knowing at this stage what the most beneficial age at which career education or counselling may be most productively undertaken. Only three of the 30 studies reviewed comprised a sample of children younger than high school age, and the remaining 17 studies reviewed (apart from the 10 using adult samples) used a variety of high school samples taken from grades eight to twelve. Obviously, there is much yet to be determined. However, if the findings of the papers reviewed in this section are advanced in a systematic and judicious manner, the future of career intervention programming and research holds considerable promise.

## CHAPTER 3: REVIEW OF CONSTRUCTS

### Key Career Development Variables

#### *Introduction*

The previous chapter began with a comprehensive overview of career development theory leading to a detailed review of social cognitive career theory (SCCT). Recent career development research that has been conducted in the Oceanic region, and career education policy and practice within Australia, were then summarised to provide a local context for the present study. This was followed by an outline of research concerning career education intervention evaluations, and their deficiencies.

This chapter will present a detailed review of the main career development variables employed as outcome measures for the current career education intervention evaluation. The three key constructs of interest were: career maturity (CM), career decision-making self-efficacy (CDMSE), and career indecision (CI). A fourth construct, adolescent decision coping behaviour, will also be reviewed. Results of a factor analytic examination of a measure of this latter construct will be provided, since the two consequent factors were used as additional dependent measures to augment the other three key outcome measures utilized (i.e., CM, CDMSE, and CI).

The first section of this chapter comprises a paper published in a recent edition of the *Australian Journal of Career Development* (Prideaux & Creed, 2001) wherein the recent literature on the three related career developmental constructs of CM, CDMSE, and CI was reviewed. Articles included were those published since 1990, and were generated by searching the relevant psychology and education databases. Criticisms of the usefulness and validity of the constructs were highlighted. In particular, calls for the CM and CI constructs to be revised were discussed. The strengths and weaknesses of the research methodology used in the three areas were also examined, and recommendations for future research were made. In all areas, a clear need for longitudinal designs to examine these developmental constructs was identified.

### *Career Maturity*

Super's influential work (1957; 1980; 1990; 1994), initially formulated in the early 1950s, has been widely tested, expanded, revised and refined. One of the central variables in his segmental model of career development is the construct CM, which has become one of the most prevalent variables in research involving the career development of adolescents (Powell & Luzzo, 1998). Career maturity is the extent to which individuals are able to make career-related choices independently, and was defined by Super as the "individual's readiness to cope with the developmental tasks (for) that stage of development" (1990, p. 213). It is generally accepted as comprising both cognitive and affective components.

Several assessment instruments have been constructed to measure CM. One of the most widely used, the Career Maturity Inventory (CMI; Crites, 1978a), was designed to test attitudes with regard to decisiveness, involvement, independence, orientation and compromise. It also contains a competence test that assesses knowledge in terms of self-appraisal, occupational information, goal selection, planning and problem solving. The CMI, and the Career Development Inventory (CDI; Super, et al., 1988), another instrument designed to measure CM, have acquired adequate psychometric validation to warrant their continued use (Levinson, Ohler, Caswell, & Kiewra, 1998).

Patton and Lokan (2001) presented a comprehensive report on research into the correlates of CM including age, gender, socio-economic status, culture, role salience, self-directedness, career indecision and work experience. They argued that the concept could be updated to make it "more appropriate in times of changing career patterns and more applicable to a wider range of societal groups" (p. 43). Indeed, these authors stressed the importance of contextualism as reflected by Super's original conception of the construct, joining calls from others (e.g., Savickas, 1997) for more consideration of this factor. They viewed such a re-formulation as the key to providing theoretical momentum for future work with the construct while also advocating the retention of its general principles.

In a special edition of the *Career Development Quarterly* (1998, Volume 47), Niles (1998) affirmed the role of CM in career development theory and emphasized the need to consider it within a social context. A second author (Raskin, 1998)

suggested that personality and decision-making style needed to be integrated into research on CM, while others (Schmitt-Rodermund & Silbereisen, 1998; Vondracek & Reitzle, 1998) demonstrated the need for considering cultural contexts, historical determinants and economic/political structures. As a group, these authors endorsed Blustein's (1997) argument for the facilitation of exploratory skills and attitudes (i.e., CM) within a "context-rich perspective" (p. 260) to equip people "for the rather dramatic turns that may exist in travels through the life-career rainbow" (p. 272).

Career maturity has also been criticised as a construct. Savickas (1997) argued that its fragmented structure and lack of parsimony were major weaknesses. He called for the inclusion of learning and decision-making processes into the model and the replacement of the construct of maturity with one of adaptability. Supporting this, Raskin (1998) proposed that "career adaptation is a richer, broader, developmental construct than career maturity" (p. 34).

Despite these comments, many authors continue to acknowledge the contribution of CM and apply it in their research. For example, Powell and Luzzo (1998) examined the CM of 253 high school students in relation to their career decision-making attributional style. This study found that those who had more personal control over their career decisions had more positive attitudes toward career decision-making and were more career aware. In another investigation using a high school sample of 1,971 Australian adolescents, Patton and Creed (2001) found developmental differences with 15-17 year olds scoring higher on CM attitude and knowledge than the 12-14 year olds. This study also revealed a complex pattern of gender differences, which led these authors to conclude "boys may benefit from increased attention to career knowledge and girls from attention to the appropriateness of career planning" (p. 349).

At a more general level, research into CM and its demographic (e.g., age, gender), career (e.g., identity, career indecision) and personality correlates (e.g., self-efficacy), has been criticised as being unsystematic and poorly integrated (Patton & Lokan, 2001). Longitudinal studies are required to augment this correlational evidence, and some equivocal findings need further investigation. For instance, an increase of CM with age has generally been demonstrated, but, for example, decision points in the educational systems have been shown to disturb maturation. Studies of CM and gender also produce inconsistent results. Females tend to score higher than

males on CM, though some studies have found the opposite, and others have found no differences (see Patton & Lokan). Lastly, there is a growing case for CM to include cultural and time-specific contexts and to have other factors, such as planning, exploration and adaptation, taken into account.

### *Career Decision-making Self-efficacy*

The seminal work conducted by Betz and Hackett (1981) demonstrated that career decisions, achievements and adjustment behaviours were subject to the influence of self-efficacy beliefs in both men and women. Soon after this, Taylor and Betz (1983) developed the Career Decision-making Self-efficacy (CDMSE) scale to measure these self-efficacy expectations, in terms of goal selection, occupational information, problem solving, planning, and self-appraisal. In the process, Taylor and Betz demonstrated that participants with lower levels of efficacy for decision-making were also more undecided.

Several reviews have been published on CDMSE. Betz and Hackett (1986) focused on the use of CDMSE in clarifying “the mechanisms affecting women's disadvantaged status in the labor force” (p. 279). They pointed to sex-role stereotyping of particular career-related tasks as being a key determinant of gender differences in CDMSE. More recently, Betz and Luzzo (1996) reviewed the research on the CDMSE scale and its abridged short-form version (CDMSE-SF) and cited research attesting to their reliability, and content, criterion and construct validity. These authors also reported on a small number of counselling and educational interventions (Foss & Slaney, 1986; Fukuyama et al., 1988; Luzzo, Funk & Strang, 1996; Luzzo & Taylor, 1994), which they suggested were underrepresented in an area dominated by correlational studies. They appealed for more intervention studies in order to clarify, for example, which sources of self-efficacy more readily lead to changes in CDMSE.

A large number of articles have examined the psychometric properties of the CDMSE scale (Betz, Klein & Taylor, 1996; Gati, Osipow & Fassa, 1994; Luzzo, 1993a, 1996a; Peterson & delMas, 1998; Sandler, 1998). In the main, these investigations have verified the scale's strengths (based on clearly defined theory, high internal consistency, high test-retest reliability), although they have generally

found high inter-subscale correlations and a single general factor, meaning the CDMSE scale is best viewed as a general measure. Unfortunately, the near-exclusive use of convenience samples of college students is a weakness with these studies (Luzzo, 1996a).

A criticism of the area generally is that the research has chiefly involved correlational designs with students enrolled in introductory university courses. The correlates of CDMSE that have been examined are extensive. These include: mathematics self-efficacy (Luzzo, Hasper, Albert, Bibby, & Martinelli, 1999), generalized self-efficacy and global self-esteem (Betz & Klein, 1996), environmental and self-exploration (Blustein, 1989), women's attitudes toward nontraditional occupations (Mathieu, Sowa & Niles, 1993), and underprepared college students' institutional integration (Peterson, 1993a). Still more correlational studies have examined: college major indecision (Bergeron & Romano, 1994), locus of control and aspiration-occupation congruence (Luzzo & Ward, 1995), sex-role identity (Gianakos, 1995), patterns of career choice development (Gianakos, 1999), cultural differences (Mau, 2000), trait anxiety and ethnic identity (Gloria & Hird, 1999), occupational barriers (Luzzo, 1996b), and career maturity (Luzzo, 1993b; 1994). Typically, these studies demonstrate significant relationships between CDMSE and the respective variables, and where group differences are investigated ethnic minorities and undecided participants report lower levels of CDMSE.

While this body of evidence related to young adults is impressive, there have been few studies conducted using high school participants. Brown, Darden, Shelton and Dipoto (1999) present one exception. These authors examined students' CDMSE in relation to their beliefs about career exploration, and found the latter to significantly predict CDMSE. They concluded "students' perception of the labor market and expectations of attaining career goals is related to how efficacious they feel in the implementation of career decisions" (p. 235). In another high school study, Anderson and Brown (1997) found that career development attitude was able to predict CDMSE for both rural and urban students. Lastly, Larson and Majors (1998) used factor and cluster analysis of several career-planning measures, including the CDMSE scale, to identify career indecision subtypes in 16-17 year old high school students. Two underlying dimensions were revealed (personal agency and affective

distress), however, results cannot be widely generalized, as participants were those nominated as “gifted and talented”.

Only six articles were identified in the literature where participants were assessed more than once. Four of these were referred to above in relation to intervention evaluations. They used pretest-posttest designs to assess the value of: (a) a videotape program designed to broaden women’s perceived career options (Foss & Slaney, 1986); (b) a computerized career guidance program entitled DISCOVER (Fukuyama, et al., 1988); (c) the effects of verbal persuasion on career decision-making activities (Luzzo & Taylor, 1994) and; (d) an attributional retraining video (Luzzo, et al., 1996). The fifth study was Luzzo and Day’s (1999) evaluation of college students’ CDMSE before and after a self-efficacy enhancing feedback session. Significant increases in CDMSE were recorded in each of the above cases. Lastly, Kraus and Hughey (1999) evaluated lessons focusing on self-appraisal, occupational information gathering, goal selection, planning and problem solving for high school students. Unfortunately, this study used a questionable design (posttest-only with delayed posttest control-group) and thus, conclusions were difficult to draw.

To summarise, CDMSE is a well-developed construct, and the two main instruments used to measure it (i.e., CDMSE and CDMSE-SF) have been shown to exhibit sound psychometric properties. The construct has undergone rigorous examinations, albeit with a disproportionate emphasis on college samples and correlational data. It is also important to note that in every instance except two (i.e., Blustein, 1989; Kraus & Hughey, 1999), there were marked female/male imbalances of participants, which future research should seek to examine.

### *Career Indecision*

Like CDMSE, career indecision (CI) is closely related to the concept of CM. Super and Jordaan (1973) viewed one aspect of CM as being the ability “to make socially required career decisions” (p. 4). Consequently, CI is viewed as a developmental problem within the career maturation process “that results from a lack of information about self or the world of work” (Chartrand et al., 1994, p. 55). The

assessment of CI provides information about the specific problems that prevent respondents from making career decisions.

The Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico & Koschier, 1976) is the most widely used measure of indecision in the literature (Meier, 1991). This was developed to assess the extent and nature of CI as well as to provide a criterion index for the evaluation of career counselling interventions (Betz & Voyten, 1997). It has been extensively revised and tested and has accumulated impressive validity evidence (Levinson et al., 1998). Because the original items were generated from problem statements, scores on the CDS can be analysed for individuals to determine whether there is a need for intervention and, if so, examined to pinpoint particular concerns in terms of the career decision-making difficulties.

Career indecision was the focus of three review papers published in the literature since 1990. First, Hall (1992) concluded that work in this area was characterised by a static and mechanistic, rather than developmental approach, and that CI was viewed as a feature of the individual rather than the outcome of a dynamic process. Hall also censured CI research for its apparent disregard of relevant career theory, and concluded that the construct needed to be broadened to include career exploration. In the second review, Osipow (1999) drew attention to the difference between indecision, classified as a normal developmental phase within the career decision-making process, and indecisiveness, which he depicted as a personal trait impinging on many decision-making situations. He cited research by Haraburda (1998), which has begun to establish the characteristics of indecisiveness that may boost “the design of interventions to deal with indecisiveness as opposed to indecision” (p. 152). Osipow also highlighted the difficulties associated with measuring these two entities, as they are often manifestly alike. He endorsed the CDMSE scale as being helpful in identifying “aspects of the career decision-making process itself in which clients may be deficient” (p. 152), whereas the CDS was viewed favourably as a “pre-post measure to establish what, if any, changes have occurred in career indecision after counseling” (p. 150). The third review, by Osipow and Winer (1996), also had a testing focus, and catalogued the research findings using the CDS, including the areas of gender, cross-cultural research and special populations.

Of the papers reporting individual CI studies, most again entailed measurements taken on one occasion and used undergraduate psychology students. Researchers here have identified associations between CI and task-specific self-efficacy (Temple & Osipow, 1994), family interaction patterns (Whiston, 1996), students' perceptions of the parental relationship and career decision-making (Guerra & Braungart-Rieker, 1999), and Kortas, Neimeyer and Prichard (1992) have initiated work on the relationship between vocational structure and participants' decision-making style. Stead and Watson (1993) factor analysed data from the CDS and other related instruments and found the former to be a unidimensional measure of indecision compared with the others that were more multidimensional. Likewise, Leong and Chervinko (1996) examined the construct validity of CI. Negative personality traits such as perfectionism and fear of commitment were found to account for up to 20% of the variance when CI was measured by the CDS. These authors also highlighted the two aspects of CI, as "a trait-based vocational problem" and as part of "a normative developmental process" (p. 327).

Brisbin and Savickas (1994) used the CDS, My Vocational Situation (Holland, Gottfredson & Power, 1980) and the Career Decision Profile (Jones, 1989) to discriminate between identity status groups. Diffused and moratorium groups were successfully discriminated from identity achieved and foreclosed groups, but the measures were found to be insensitive to differences in the two committed statuses (i.e., foreclosed and achieved).

One group of articles incorporated both the CDS and CDMSE scales. Taylor and Popma (1990) found a moderate negative relationship between CDMSE and CI, and identified CDMSE as the only variable to make a significant contribution to the prediction CI. Betz and Voyten (1997) also established self-efficacy beliefs as the best predictor of CI. These authors verified indecision as a significant predictor of career exploration intentions amongst women, with those less decided being more likely to make plans to undertake career search activities. Lastly, Osipow and Gati (1998) examined the construct and concurrent validity of the Career Decision-Making Difficulties Questionnaire (CDDQ; Gati, Krausz & Osipow, 1996). These authors also found a moderate correlation between CDMSE and CI, and recommended CDDQ as a suitable adjunct to the CDS as it "enables assessment of

systematic categories of difficulties... some of which are represented in the CDS... only indirectly” (p. 361).

Finally, there were four studies identified as using high school students that explicitly examined results obtained from the CDS. In the first, Staley (1996) found CI was positively related to fear of success and negatively related to self-esteem. Second, CI was found to be related to identity status (Vondracek, Schulenberg, Skorikov, Gillespie & Wahlheim, 1995). Third, gender differences were found to account for 21% of the variance in career decision-making problems, with males perceiving greater problems than females (Rojewski & Hill, 1998). In contrast, Patton and Creed (2001) found girls in their large sample to have higher indecision scores than boys. A fluctuating pattern of CI according to age was also revealed by these authors who concluded that “decisiveness was affected by external pressures within the school system” (p. 348).

Despite this widespread and useful research, the mainly cross-sectional designs undermine the merit of this accrued knowledge base. The studies’ inability to deal with causal relationships or interaction effects was frequently acknowledged and the critical need for longitudinal data was repeatedly stressed. Only one alternative design (Kraus & Hughey, 1999) was identified in the present review (although this study failed to gather pre-test data). It is imperative that longitudinal designs be used on a wider variety of populations. Lastly, there have been calls for the CI construct to be expanded to give it a more process-oriented focus, for it to be viewed more positively as a temporary status within the career development course, and for it to include career “exploration” to enhance its scope.

### *Summary*

This section of Chapter Three has provided an overall impression of the accumulated evidence for the three key career development constructs CM, CDMSE, and CI. It has briefly portrayed the strengths and weaknesses associated with the studies in each area, and summarised the recommendations for future research related to these constructs. In general, the instruments commonly used to assess these variables have been shown to exhibit sound psychometric properties, and the studies involving these constructs generally attested to their value in terms of describing how

career development transpires and what problems or deficiencies young people experience along the way. Furthermore, a wide range of personal and contextual variables has been identified as correlates of all three constructs.

At best, the body of evidence associated with these variables may be viewed as a firm foundation from which more parsimonious and heuristic advancements may be launched. The ultimate judgement will depend upon how subsequent research efforts are managed. If researchers and theorists are to heed the call for refinement of these constructs and implement more sophisticated research designs, an optimistic outcome is envisaged.

The big picture view acquired is threefold. First, these three constructs are intimately linked, and as such, may need to be investigated in unison more often. Career maturity describes an unfolding of ability to make career related decisions. Career indecision is a stumbling block within that developmental process, and CDMSE reflects the confidence to undertake these related tasks. Assertions that these three constructs are linked abound in the literature. For example, CI has been viewed as one of six approaches to measure CM (Levinson et al., 1998), and CDMSE has been considered as an important factor in resolving career indecision (Osipow, 1999). If more research were undertaken with these aspects of career decision-making examined in unison, then findings would be more comprehensive and gaps in the research field would be more limited.

Second, the constructs of CM and CI in particular require revision. Calls have been made to streamline CM so that it is more responsive to contextual influences. For example, Patton and Lokan (2001) reviewed research on this construct and illustrated ways in which it may evolve to become more relevant to contemporary career patterns and diverse cultures. Other suggestions for the revision of CM and CI focus on giving them a more positive slant. Career adaptability, which is the capacity to change to meet new circumstances has been proposed as a more useful conceptualization than CM. Savickas (1997), for instance, presented a strong argument for this move, stating that it "would focus counselors' attention on developing readiness to cope in clients of all ages, across all life roles" (p. 254). Likewise, CI could be couched in a more positive framework by considering it as part of "identity exploration and identity formation... rather than emphasizing the ultimate goal of reaching a decision" (Vondracek et al., 1995, p. 27). Hall (1992) also

asserted that career exploration can be a more useful construct as “exploration can lead to trial activity, new choices, identity changes, and increased adaptability and personal agency” (p. 247).

Third, CM, CDMSE and CI need to be explored more systematically. With the advent of modern communication, researchers worldwide are now well placed to coordinate their efforts. The correlational studies that have already been undertaken need to be meticulously tested with populations of various age groups across a diversity of cultures. Methodological designs also need improvement. Of all the studies incorporated in the present review, only six were not cross-sectional. This is disturbing given the developmental nature of these constructs. Moreover, according to Hall (1992), this practice of “taking narrow slices of experiences in cross-sectional [static] terms does not do justice to the developmental process” (p. 247).

The accrued evidence for CM, CDMSE and CI is strong. However, better integration and a more sophisticated approach will enhance theory building in this area. Theoretical constructs are not intended to be immutable, but rather are expected to develop as contexts change and the body of evidence supporting them accumulates.

### *Adolescent Decision Coping Behaviours*

As discussed previously, CDMSE has been found to be related to CI (Betz & Voyten, 1997; Fukuyama et al., 1988; Taylor & Betz, 1983; Taylor & Popma, 1990). This relationship is strongest in regard to one of Osipow’s (1987) postulated components of indecision, namely, lack of structure and confidence (Taylor & Betz). This component indicates “the possibility of choice anxiety leading to avoidance of decision-making” (Osipow, Carney, & Barak, 1976, p. 239). Hence, it may follow that low CDMSE could be perpetuated due to this state of inefficacy, which engenders avoidance behaviours such as panic, evasiveness and complacency. Here lies a rationale for the inclusion of a measure of decision coping patterns in the present study to explore the relationship between CDMSE and the *behaviours* adolescents typically engage in when making difficult and important decisions.

In 1985, Robbins argued that more research was needed with a focus “on the relationship between reported self-efficacy expectations and actual performance of

career decision-making behaviors” (p. 71). This catch cry is still evidenced by several authors including Taylor and Popma (1990) who suggested that further research involving CDMSE needs to investigate “the relationship of stated behavioral outcomes and actual behaviors” (pp. 29, 30). Moreover, Chartrand and Rose (1996) stressed the view that “it is more important to understand and address the mechanisms that lead to differences in career choice than to simply note that differences exist” (p. 343).

Therefore, the Flinders Adolescent Decision-making Questionnaire (FADMQ), which was developed by Mann and his colleagues (Mann, 1988), was employed to measure the decision coping patterns of the high school students who participated in the present study. This instrument was employed so that the behaviours typically adopted by these adolescent participants could be investigated in conjunction with their efficacy beliefs. Before this measure is described, a brief outline of the theory from which it has evolved is required.

Janis and Mann (1977) presented a descriptive theory of how decisions are typically made under stress. It was entitled the conflict theory of decision-making. Through their research, five specific coping styles were identified. These authors proposed that adolescents tend to employ one of these patterns of behaviour when faced with the task of making an important decision. The five coping patterns are:

vigilance (careful appraisal of options and consequences), hypervigilance (rapid and impulsive choice), defensive avoidance (such as procrastination, rationalisation and ‘passing the buck’) and complacency in the form of unconflicted adherence or unconflicted change to simple courses of action

(Mann, Harmoni, Power, Beswick, & Ormond, 1988, p. 160).

Since that time, Janis and Mann's work has been extensively refined and widely adopted. For example, it has been applied to training seminars and counselling courses (Mann et al., 1988) to assist people to become more efficient decision makers. The conflict theory of decision-making has also led to numerous articles and books aimed at further elucidating adolescent decision-making behaviour. For instance, Mann, Harmoni, and Power (1989) have reviewed evidence for nine indicators of decision-making competence in adolescence. Moreover, Mann and Friedman (1999) have reported on various international studies of decision-making involving American, Israeli and Australian participants. Incidentally, in the

Australian study reported by Mann and Friedman, choosing a career and selecting school subjects were respectively rated as the most difficult decisions to be made by a sample of 567 high school students.

The FADMQ measures competent and maladaptive decision coping patterns in adolescents (Mann & Friedman, 1999). It has 30 items, which are scored as 5 subscales consisting of 6 items each. The “Self-Esteem” items assess pre-decisional processes concerning approach and avoidance tendencies when faced with decision-making activities. Effective decision coping patterns are assessed by items referring to behaviours such as thinking about the decision and taking care before making a choice. Accordingly, this subscale assesses an adaptive coping pattern that Mann and Friedman label “Vigilance”. Poor decision habits such as impulsiveness, haste, indifference and procrastination are examined via the remaining three subscales called “Panic”, “Complacency”, and “Cop Out”.

Inspection of the baseline data taken on the FADMQ revealed significant inter-subscale correlations (see Table 3.1). Those amongst the latter three subscales of “Panic”, “Complacency” and Cop Out”, which were purported to measure different maladaptive decision coping patterns, were of particular concern since they appeared to be measuring a unidimensional component.

Table 3.1

*Pearson Product-Moment correlations between the five subscales of the FADMQ*

| FADMQ               | 1  | 2      | 3       | 4       | 5       |
|---------------------|----|--------|---------|---------|---------|
| 1. Self Esteem (SE) | -- | .49*** | -.24*** | -.31*** | -.29*** |
| 2. Vigilance (V)    |    | --     | -.35*** | -.20**  | -.33*** |
| 3. Complacency (C)  |    |        | --      | .95***  | .96***  |
| 4. Panic (P)        |    |        |         | --      | .95***  |
| 5. Cop Out (CO)     |    |        |         |         | --      |

*Note:* \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

*Exploratory Factor Analysis of the FADMQ*

To determine if there were any underlying dimensions that formed more coherent sub-groupings of the FADMQ, an exploratory factor analysis was conducted on the baseline Time 1 data using principal axis factoring with an oblique rotation. This analysis initially identified four factors that accounted for 40% of the variance, however, the third factor was considered unstable since just three items loaded onto it and, added to this, the third and fourth factors contributed a mere 4% of the variance combined. Therefore, a two factor solution was accepted as the most factorially simple and conceptually interpretable.

Five items loaded onto Factor 1 (eigenvalue = 7.33, variance explained = 25.27; eigenvalues and % variance derived from initial principal axis factoring) and were deemed to represent maladaptive decision coping patterns since they were principally from the Cop Out, Panic and Complacency subscales. This factor was subsequently labelled Maladaptation. The seven items that loaded onto Factor 2 (eigenvalue = 3.22, variance explained = 11.10%) were considered reflective of adaptive decision coping patterns. As three of these seven items came from the original Self-Esteem subscale, and the other four items were part of the Vigilance subscale, the term Resoluteness was employed to signify the sense of confidence and determination depicted by this combination of items. These results support the organisation of the FADMQ into two separate factors tapping maladaptive and adaptive decision coping patterns. Factor loadings after rotation are reported in Table 3.2.

Table 3.2

*Principal axis factor estimates of oblique factor loadings for the FADMQ; N = 296*

| Item   | Factor<br>1 | Factor<br>2 |
|--|-------------|-------------|
| I prefer to leave decisions to others  | .79         | -.02        |
| I'd rather let someone else make a decision for me so that it won't be my problem.     | .71         | -.02        |
| I like to make decisions myself. *   | .39         | -.38        |
| When faced with a decision, I go along with what others suggest                        | .36         | .06         |
| Whenever I get upset by having to make a decision, I choose on the spur of the moment. | .33         | .07         |
| I think that I am a good decision maker  | .07         | .79         |
| When I make a decision, I feel that I've made the best one possible.                   | -.04        | .66         |
| The decision I make turn out well.   | .06         | .64         |
| I feel confident about my ability to make decisions.                                   | -.11        | .63         |
| When I decide to do something, I get right on with it.                                 | -.06        | .53         |
| Once I have made a decision then I don't change my mind.                               | -.01        | .42         |
| I take a lot of care before I make my choice.  | .02         | .40         |

*Note* \* : This item was reverse scored.

### *Confirmatory Factor Analysis of the FADMQ*

Confirmatory factor analysis (CFA) was conducted on the Time 3 data using Amos Version 4.0 (Arbuckle & Wothke, 1995). This aggregate of data was chosen over Time 2 and Time 4 data since the former was collected before the wait-listed Control group had been exposed to the intervention and the latter was collected to assess temporal lag effects later in the year. In accord with CFA, an a priori model was proposed and tested to assess its adequacy with respect to how well these data conformed to its structure. The five items from the first factor obtained in the exploratory factor analysis were allowed to load freely on a latent factor representing Maladaptation, and the seven adaptive items were allowed to load freely on a latent factor representing Resoluteness. The correlation between the two latent factors was freely estimated with variances fixed at unity to identify the model. Although significant, the Chi square statistic,  $\chi^2(53) = 84.17, p = .004$ , was not considered of major concern due to its conservative nature and the large sample size employed for the CFA ( $N = 275$ ). The subjective indices of fit were indicative of the model fitting the data well (Goodness of Fit = .95, Adjusted Goodness of Fit = .93, Incremental Fit

Index = .97, Normed Fit Index = .93, Tucker-Lewis Index = .97, Comparative Fit Index = .97, Root Mean Square Error of Approximation = .05, Probability of Close Fit = .61) and the correlation between the latent factors labelled Maladaptation and Resoluteness was -.20. Mann's (1988) five Factor format was also tested using CFA, with results indicating a poor fit for this model. Therefore, the results of the CFA supported the assessment of decision coping patterns in terms of this reduced two factor structure as opposed to the FADMQ in its five subscale format. Subsequent analyses in this thesis will utilise these two scales (i.e., Maladaptation & Resoluteness) as dependent variables when assessing adolescents' perceptions of their decision-making behaviours.

## CHAPTER 4: STUDY 1

## Qualitative Study

The research project reported in this thesis took place in a government high school in an outer suburb of Brisbane, the capital city of the state of Queensland. In the main, families in this school community come from low socio-economic groupings. Figures obtained from the last Australian census (Australian Bureau of Statistics, 2001) show that while 15% of employed people in Queensland earn less than \$200 taxable income weekly, just over a quarter of employed people in this school's local government district fall into this category. The 25% unemployment rate for Logan is also of concern since the national rate is just under 7%. Regional statistics (Australian Bureau of Statistics, 2000) reveal that crime rates in Logan are also commensurately higher than in other areas. For example, motor vehicle theft in Logan occurs at a rate of 921 per 100,000 residents as compared with 220 in the neighbouring Redland district or 472 per 100,000 in Queensland overall.

The main purpose of this first study was to obtain context-specific data to capture the empirical reality of the cohort of students for whom the career decision-making course would be designed. Staff and parents who were interviewed were asked to give their opinions regarding the circumstances they believed were influencing the career decision-making of Year 10 students at their school. These data were then used as a training needs analysis. Hence, Study 1 aimed to achieve a clear indication as to the perceived career education training needs of these particular students. A further aim was to build rapport with staff at the school whilst also heightening awareness of the project. It was expected that the interview process would create a sense of ownership amongst the participants and engender greater investment in its process and outcomes.

This study comprises data collected from 30 adults who were interviewed individually. All participants were asked the same six open-ended questions. Themes generated from each of these questions are presented in this chapter. The prevalent and overriding issues raised by participants across these six topics of inquiry are then discussed. This chapter closes with implications for the design of the intervention.

## Method

### *Design*

Naturalistic inquiry methodology was employed to gain a rich and detailed understanding of the current practice and perceived requirements of career decision-making education in the school. This “discovery-oriented approach” (Patton, 1990, p. 41) was selected so that no constraints would be placed on the outcomes of the study, since the aim was simply to describe what was happening and what needed to happen according to those close to the students. Semi-structured interviews and content analysis were the specific techniques chosen to ground the research in the real-world situations of the students under investigation.

According to Lofland and Lofland (1984), the advantage of the naturalistic tradition is that it elicits rich, detailed data that is founded in personal sentiment. These authors further maintain that this “starting where you are” (p. 9) approach and face-to-face interaction allow for the personal views of those under investigation to be meaningfully linked to the “stringent intellectual operations to come” (p. 10). Thus, this qualitative study formed the foundation for the quantitative research to follow by placing the phenomena to be examined in context. Moreover, Richie et al. (1997) recommend that such an approach is “particularly useful with understudied populations or phenomena” (p. 134). Hence, this qualitative method of inquiry was also deemed appropriate since career education interventions for high school students had seldom been studied previously.

Qualitative methodology was also chosen for Study 1 since it is a well established procedure used by human resource development personnel to elicit “knowledge that is often critical to the design of the developmental learning experiences needed for individuals” (Delahaye, 2000, p. 165). Indeed, the diagnostic process, which Delahaye refers to as the Human Resource Development Investigation procedure, provided rigorous guidelines to ensure that the interviews and subsequent content analysis and reporting of data were done with the ideal of accuracy given prime importance. Issues central to this type of qualitative research conducted within organisational settings, such as the integrity of the researcher, acknowledgment of subjectivity and bias, and careful interpretation of behaviours, messages, and events, informed the current training needs investigation.

### *Participants*

A stratified random sample of 30 adults was drawn from the staff register and parent committee to gain the perceptions of the school community. Names were randomly selected from each of the various staffing levels. Therefore, the principal and department heads, elected representatives from the parent body, regular teachers, ancillary and administrative staff were each given proportional representation in the sample. Appendix B itemises this selection process.

### *Procedure*

The six open-ended interview questions (see Appendix C) were generated through a combination of immersion in the career development literature and through collaboration with career research colleagues. Questions were worded with care to avoid dichotomous or leading phrases and to ensure an appropriate presupposition format was used (Patton, 1990). Probes and follow-up questions were also devised via a pilot test of the questions with a small sample of teachers from another school not involved in the study. “Could you elaborate on that?”, “Can you give me more detail about that” and “Would you be able to give me an example of that?” are examples of the prompts used when participants’ answers were too brief.

Question 1 was geared toward gaining information about what programs were currently being run at the school. The intent underlying this query was to ensure that the content and/or process of the career education intervention to be developed and tested in the current research project would not overlap, but rather, would build upon existing career-related procedures at the school. It was also important to determine what was in place so that the new program would be congruent with school values and be practical in its design. Question 2 gave interviewees the opportunity to say what they believed should be included in career decision-making programming at their school. It was designed specifically to elicit training needs.

Questions 3, 4, and 5 were principally formulated from the predominant topics discussed in the literature concerning adolescents and career decision-making. Careful attention was given to the theoretical constructs that each was designed to tap. Question 3 examined “contextual affordances” by asking about perceived

barriers to sound career decision-making. Question 4 was concerned with “career decision-making self-efficacy” and was worded in terms of confidence levels when approaching career-related decisions. “Career choice goals” were explored via Question 5, which asked about aspirations concerning career decisions. Question 6 was designed to give participants the opportunity to add anything that they personally felt was important for the researcher to be aware of in regard to the research project.

All interviews were conducted by the researcher and took place in a quiet room in the main administration building at the school where privacy was assured. Participants were made aware of the intervention and research project that was to be carried out at their school well before they were selected to take part in the interview. The researcher gave an introductory presentation about the project at a whole school staff meeting where staff were invited to ask questions and take part in a discussion about the design of the proposed studies. Parents were informed about the research in the school newsletter four weeks prior to its commencement and were encouraged to contact the school if they had any queries.

At the onset of each interview, interviewees were led through a consent form (see Appendix D). This outlined the purpose of the study, why they were being interviewed, the confidential nature of the study, and other details such as the actual questions to be asked and the expected length of the interview. If participants agreed to continue, the tape recorder was turned on and the interview proceeded. Every person who was selected to participate, decided to remain in the study.

The subsequent guided conversations were recorded and later transcribed. Participants were numbered from 1 to 30 to retain anonymity. The transcriptions were content analysed using the NVivo: Nudist for qualitative research (Qualitative Solutions and Research Pty. Ltd., 1999) computer program. This analysis was done in several stages using a systematic technique for coding qualitative data (Minichiello, Aroni, Timewell, & Alexander, 1995). All answers were scrutinised and assigned unfettered codes to ensure every different topic discussed became a unit of analysis with an equal level of importance.

Conceptual themes that emerged from each of the questions were then elicited by going back over all of the initial codes. These coding categories were either regrouped, renamed or divided into sub-files where appropriate. For example, at this

stage of the analysis the original codes of “work education” and “career education” were merged since it became obvious that participants were speaking about the same program in their answer to the first question.

Care was taken at this point to retain all original data units. Hence, none was discarded but rather were systematically reconfigured into more meaningful divisions that better reflected the frequency of common statements and topical issues voiced by the participants. The resultant themes that emanated from the answers to each of the questions were presented in six groupings corresponding to the question asked. Within each of these groupings, the themes were arranged according to their level of importance based on how often they were mentioned by different participants. This process allowed the researcher to access the range of themes under each of the six sets of answers from those most prevalent to ones submitted by a single individual.

The final stage of the analysis aimed to condense themes to acquire a “big picture” assessment of the data. To do this, search tools within the NVivo package were utilized to determine the most common issues raised by participants across the six questions. Despite being designed to elicit responses about five or more different aspects of the career decision-making education of the Year 10s, some topics were repeatedly mentioned no matter which question was asked. This part of the analysis aimed to tap these recurrent themes. These were the issues that were discussed, notwithstanding the diversity of the questions asked, and thus were deemed to be of particular significance. For example, the words “realism”, “realistic” and/or the phrase “a sense of reality” was mentioned by many people when replying to a variety of the questions, and as such this became an overriding theme to emerge from the entire data set. Predetermined criteria guided the acceptance of themes to be given this overriding status. They were required to have appeared within three of the six question groupings and to have been raised by 10 or more participants.

## Results

The main themes generated from each of the six interview questions are presented under six corresponding headings entitled: (i) *Programs*, (ii) *Training Needs*, (iii) *Barriers*, (iv) *Confidence*, (v) *Goals*, and (vi) *Addendum*. Following this, the overriding issues raised by participants across the six questions are discussed under the next heading, *Recurrent Themes*. A summary table accompanies each of these seven sections to provide an overview of the main themes and their component sub-themes. The number of times each topic was discussed, as well as the number of different participants who mentioned them, are presented in the last two columns of each table to indicate the relative importance of each theme.

### *Programs*

The first question asked about programs that were operating at the school to assist students in career decision-making. Two main themes were generated from answers to the first question. A summary of these is presented in Table 4.1.

Table 4.1

#### *Overview of Themes Generated by Question 1*

| Programs   |       |        |
|--|-------|--------|
| Themes and Sub-Themes                                    | Times | People |
| Didactic Programs  |       |        |
| • Jobs Pathway centre linking school leavers to jobs     | 15    | 14     |
| • Vocational Education and Training for Years 11 & 12    | 23    | 9      |
| • Career education for Year 10                           | 17    | 5      |
| • Subject selection assistance for Year 10               | 4     | 4      |
| Informal Input   |       |        |
| • Interview with Guidance Officer for Years 10, 11, & 12 | 28    | 18     |
| • Embedded in curriculum                                 | 17    | 13     |
| • Outside information                                    | 15    | 11     |
| • Teachers' advice/Dissemination of information          | 6     | 5      |

### *Didactic Programs*

The first main theme was labelled Didactic and referred to the formal programs or procedures that participants identified. There were four such services mentioned, with the Jobs Pathway program being named most frequently. Jobs Pathway is a federal government initiative that provides “ongoing communication about job possibilities and job offers” (Participant No. 27) and gives specific instruction to those thinking about leaving school on matters such as resume writing, interview preparation and traineeship application. Just under half of the sample talked about this contractual organisation and most were positive about its aims and provisions. For example, “I think that’s excellent for the kids even if they have questions about what’s out there as far as jobs part-time or full-time” (19). However, many people were unclear as to how this program was utilised, making comments such as, “I don’t know how students access it or whether it accesses the students” (2).

The second type of program discussed was vocational education and training (VET). This strand of the curriculum for Years 11 and 12 was developed to cater for those who do not wish to aim for a university education. “It means another route to learning for those not as strong academically” (2), and for those with an “industry or vocational orientation” (15). These subjects, including early childhood studies, catering, technical studies and business education provide students with “some real life experience in the field” (17).

The third program, the school-based vocational course for Year 10 students was cited by five participants as an existing program to assist in career decision-making. It is “geared towards getting these kids out and finding jobs” (20). It involves activities such as looking through papers for jobs, accessing job search Internet sites and making job applications. Like Jobs Pathway and VET, this course focuses on meeting the needs of students who are not aiming to do further education after they leave school: “that’s for kids who are leaving at the end of the year or will probably take vocation education subjects next year” (26). Skills needed once students are in the workforce are incorporated into the regular subject areas. For example, “in science they’re doing a horticultural business, in maths budgeting, the financial components of that” (26) and so on.

There was one other formal program mentioned. This is an information evening run each year for the Year 10 students to help them decide what subjects to choose for Years 11 and 12. “They have a day prior to that where they can come and see the subject areas and come and talk to the teachers ... and then they can come with their parents that evening ... part of this is actually career information” (21).

Overall, participants felt there was a need for a more structured approach, even though the programs in place were viewed positively. It was interesting to note, however, that participants mentioned only the one program, except for eight people who mentioned two. This seems to indicate that there is not a widespread knowledge of the variety of programs available to the students amongst staff and parents at the school.

### *Informal Input*

The other sources of career input mentioned in response to the first question entailed events or meetings that were not fixed procedures or programs, but rather, less formal career decision-making related assistance for small groups of students. Meetings with the school’s two guidance officers was the most prevalent example. Over half of the interviewees spoke about the annual interviews that these professionals conduct. Although the guidance officers can be accessed on a voluntary basis, students tend not to avail themselves of this service. “I don’t think that’s at the top of their agenda at the moment [in Years 8, 9 & 10], which is a bit of a shame because they’re going to have to think about it sooner or later” (19). Students in Year 10 are expected to attend one small group interview, however, to check that they have made up their minds about the subjects they intend to do in Year 11. Early in Years 11 and 12 they are re-interviewed “to see that they are on track with their choices” (25).

Career-related advice and instruction were viewed as embedded into the curriculum to some extent. For example, “I’m aware of informal situations where students will be given [career] guidance in say English and possibly Human Relationships Education” (14). Teachers themselves were also cited as career guides. For example, “at Year 10 when they choose their Maths A and Maths B we give them a letter of recommendation as far as their standard of maths is concerned” (12).

Information from sources outside the school was also nominated by several participants. This included material received from universities and TAFE colleges that is distributed to those interested in these avenues as well as occasional visits by members of local industry groups to give talks about their jobs.

### *Summary*

In general, the responses to Question 1 provided information about a range of programs and procedures that were taking place at the school whereby students were assisted with career decision-making. It was surprising to learn, however, that over half those interviewed were unaware of the two substantive career education programs running at the school. These were the VET course for Years 10, 11 and 12 and the generic vocational course run for Year 10 students across the entire year. Most people stated things like: “there isn’t any one specific program” (27) but rather “it’s sort of bits and pieces ... it’s a little ad hoc I suppose” (10).

### *Training Needs*

Question 2 elicited suggestions to include in a program to enhance career decision-making skills. These were grouped under five main themes and are discussed below in order of importance in terms of how frequently they were proposed. Table 4.2 provides an overview of these themes.

Table 4.2

*Overview of Themes Generated by Question 2*

| Training Needs  |       |        |
|---|-------|--------|
| Themes and Sub-Themes                                     | Times | People |
| Personal Development                                      |       |        |
| • Need to enhance confidence/Self-esteem                  | 14    | 11     |
| • Persistence/Motivation/Commitment lacking               | 12    | 12     |
| • Need for more self awareness – talents, interests       | 9     | 6      |
| • Social skills/Presentation                              | 7     | 6      |
| World of Work Knowledge                                   |       |        |
| • Expand knowledge of careers/Hard world/Jobs created     | 19    | 14     |
| • Work experience   | 17    | 12     |
| • Exposure to a diverse range of career options           | 4     | 4      |
| Sense of Reality  |       |        |
| • Help to make realistic decisions without deflating them | 9     | 7      |
| • Models needed to show how hard it is to find jobs       | 6     | 6      |
| • Realistic link between ability level and jobs aimed for | 6     | 4      |
| Skill Development   |       |        |
| • Goal setting skills needed                              | 8     | 6      |
| • Guidelines for how to make good decisions               | 4     | 4      |
| Early Intervention  | 15    | 8      |

*Personal Development*

Over 75% of interviewees spoke of the need for students to be boosted personally in some way. Comments about low levels of confidence and self-esteem abounded. For example, “I think it should also be a program that builds their self-esteem and motivates them because a lot of them think they would like to do things but think that they couldn’t” (22), “challenging themselves and coming away with a bit of pride, so many of our kids lack that” (8) and “lifting the kids up I think is probably the best career preparation” (11). This latter participant added that self-esteem was needed to buffer students against a sense of hopelessness and lack of persistence: “they’re down all the time so as soon as they get a few knock backs that’s it, they won’t try any more”. Lack of persistence, motivation, and a poor work

ethic were frequently flagged as indicators for the need to “work in the affective domain for kids on their attitudes to life” (27). Others couched it in terms of the need for “more self-awareness about what they are good at so they know where to start to turn” (3). Social skills training such as “being honest, being cooperative, being punctual, being well presented and doing your best even if you can’t spell well, at least have a try” (4) was also suggested.

### *World of Work Knowledge*

Many participants spoke of the need to raise students’ awareness because “they have a very limited view of the world at work” (17). “They have just such inflated ideas of what the world is like ... but once they get out there it’s a big shock and that’s probably why most of them fail because they have no idea” (26). There was a concern that students generally needed to be better “prepared for when they’re going into the workforce” (24), because “it’s a hard world out there for people wanting a job” (11). They also commented on the need for students to be taught about the changing nature of the world of work:

Jobs are being created all the time ... and they need to understand also that the job they start with doesn’t have to, I mean it’s no longer the job they end up with. So they need to understand it’s a very flexible place out there and that there’s a whole host of pathways for reaching a goal (17).

Work experience was discussed by several participants as a means by which students could gain practical knowledge of the world of work. Having students go out and visit work sites “so they actually get an understanding of really what will be expected of them” (26), and “if they want to be a nurse they should be in a ward watching people throw up [to see] whether they could deal with that” (12) are the sorts of things participants referred to in this regard.

Also, in relation to this world of work theme, were comments on the need for students to expand their options. One participant put it thus: “just a bit more description of what is available I guess because everyone knows the old police, fire, nurse, teacher, doctor ... and they can end up in KFC or Coles because they didn’t know where else to go” (3). Another person felt that if students were given more information about the diversity of options available to them it would “give them hope

that they will change and they will learn” (14). In general, many people wanted the students to be made more aware of the need to plan for a variety of career paths so they had other options to turn to if their first one became unachievable. For example, “there needs to be a program that equips them with several different possible pathways, not just one” (13).

### *Sense of Reality*

The following two examples serve to illustrate the view that over a third of the participants expressed regarding students’ overall lack of realism when approaching career decision-making:

She has huge plans to be a doctor or another wants to be a vet because they see that they make a lot of money but they don’t see the other side of it that it’s a lot of study and a lot of work (26);

They really damage their prospects of what they can do by aiming to be a brain surgeon when really they’re only going to be a nurse’s aid (12).

Some participants suggested that past students who had struggled to find work and who had gained a more realistic perspective would make excellent models for the students. They felt these people could provide valuable information about “which way they should go with their work and what obstacles they [might find] to get employment” (11) as well as “give the kids an idea of what you go through in a year [after leaving school] and what bosses are like” (15) and so on.

There was also reference made to students’ unrealistic attitude toward what they expect to do in their first job: “A ‘pov’ [poverty] job like a check-out chick, they wouldn’t do this” (17) and “well, this is ridiculous I’m expected to sweep floors” (26). Many also expressed a concern that this cohort of young people were not able to realistically assess their school achievement levels and link this with the types of jobs they would be reasonably suited to aim for. For example:

So many kids have such unreal views of what they are going to do and they don’t seem to see the connection between what they do at school and how they are going to end up in a career. I’ve had students tell me that, LA [low achievement] students, who say they want to be a doctor or a lawyer, it’s just so incredibly unrealistic (17).

### *Skill Development*

There were some who felt that students were treating school “as a holiday” (18) and thus drifting along without a sense of direction. They concluded that goal-setting skills would need to be included in a program to enhance career decision-making. For example, “I think you need a program that talks about long term goal setting, not just for jobs but for yourself as a person, personal goals, educational goals, those sorts of things” (14) and “It’s a matter of trying to get that carrot in front of them that says I can do this and I’ll enjoy that and these are the steps you need to do to get there” (30).

Building sound decision-making skills was also suggested: “I guess they need to get to understand what are good decisions and bad decisions and [learn how to] look at their future and see if I make this decision how is it going to affect me?” (16). This skill was also seen as one needed “in helping kids to make good decisions about lots of things in their lives” (27). Indeed, one participant stated, “I think it should start on decision-making skills generally because the students here don’t seem to be very good at making decisions about anything, let alone a career” (22).

### *Early Intervention*

Finally, some people expressed the view that career education programming needed to be introduced earlier than Year 10. Year 8 or earlier was referred to as being the most suitable time for “them to get some sort of guidance” (14). Participants made suggestions for “a lot of activity kind of things that raises their awareness about careers, maybe even starting to use the Job Guide at that stage” (25) to highlight the need for students to get more career information prior to Year 10. They felt that since “it actually only starts in grade 10 about two weeks before they have to make their subject selections ... it’s left too late really” (22).

### *Summary*

The themes generated from the responses to Question 2 tended to reflect much of the recent career development literature concerning the new conception of career and the skills that individuals now need in order to respond to the changing work environment. For instance, “they need to understand it’s a very flexible place out there and that there’s a whole host of pathways” (17). The interviewees recognised that students need to develop their personal skills and set realistic goals for themselves to survive in the “hard world out there” (11). Qualities such as persistence and self-confidence were repeatedly nominated as essential characteristics “to equip kids socially with the skills they need to move” (14).

General comments about the type of program required included statements such as: “The program needs to have its own status, its own worth or else it will get lost” (27). Others felt it should be continual and not just “kids going into a group and being given different options or different pathways they could take and that’s you, you’re off and that’s your bit for the year” (7). Participants stressed the need for a comprehensive career education program that “empowers a child to see that there are different options in life [and] ... that they can in fact design a pathway to get there .... Our program needs to give them hope, that they will change and they will learn” (14). Indeed, this latter participant added: “Too often in schools, we say let’s have a program, say in this case, let’s have a program for improving career decision-making and schools think they’ve done it! I think if you’re going to do it, you have to do it well. You have to train people about the issues that need to be looked at like being flexible” (14).

### *Barriers*

Answers to Question 3, which asked interviewees to nominate the barriers they believed were impacting upon students’ career decision-making, clustered under three groupings (Table 4.3). The largest of these involved comments pertaining to barriers within the students’ environment or family. The second type of barrier discussed involved individual characteristics. These concerned aspects of the students themselves that participants felt were hindering them from making sound

career-related decisions. Remarks about shortcomings in the students' knowledge about careers were grouped under the third theme.

Table 4.3

*Overview of Themes Generated by Question 3*

| Barriers   |       |        |
|--|-------|--------|
| Themes and Sub-Themes                                | Times | People |
| <b>Background</b>                                    |       |        |
| • Upbringing/No worldly experience/Parents           | 28    | 22     |
| • Area label   | 10    | 10     |
| • Unemployment                                       | 8     | 7      |
| • Low expectations                                   | 6     | 5      |
| • Financial limitations                              | 5     | 4      |
| <b>Barriers Within The Individual</b>                |       |        |
| • Lack motivation/Persistence                        | 9     | 9      |
| • Low self-esteem                                    | 6     | 6      |
| • Don't set goals                                    | 6     | 5      |
| • Poor work ethic                                    | 4     | 3      |
| • Lack of decision-making skills                     | 3     | 3      |
| • Unrealistic expectations                           | 3     | 3      |
| <b>Knowledge Base</b>                                |       |        |
| • Unaware of options                                 | 8     | 8      |
| • Lack of information                                | 7     | 6      |
| • Unsuitable subject selection/Learning difficulties | 7     | 6      |
| • Misconceptions                                     | 5     | 5      |
| • Unprepared for university/Tertiary education       | 4     | 4      |

*Background*

Students' "narrow view of life" (13) was perceived as a major barrier. This "limited life view ... [was perceived as] largely to do with the environment that they live in and the life view that their families have. This is a very insular, isolated community and some of them have no experience beyond the boundaries of this area" (27). Parents' lack of guidance and support for career decision-making was

frequently discussed. For example, “a lot of kids don’t have back up at home to make decisions” (5), parents “don’t value education enough” (27) and “a lot of them haven’t got a clue themselves so they are out of date” (22).

The area the students live in was also nominated as a barrier in itself. One participant related the following story to illustrate discrimination against people from this low socio-economic community. This particular story was also mentioned by others and as such, appears to have become a type of “organisational myth” within the school.

I was talking to a colleague here who was saying she knows someone who works for a legal firm in the city and they had a pile of job applicants and they knew this teacher worked on staff and they actually told her that they’d received an application from a student from our school and it was immediately put into the reject pile because of the name of the school (14).

High levels of unemployment were also seen as a hindrance. “Another barrier would be parents who don’t work so there’s not that working culture at home” (23). Moreover, “a lot of these kids come from third and fourth generation of unemployed. They don’t know how to access the job market because no one has ever told them” (20). Reports about students’ pessimism over finding employment was also widely expressed. For instance, “she said, oh well my mum’s unemployed, my brother’s unemployed and I’m going to be unemployed” (21).

There was another group of comments that related to students aiming for careers that seemed less than what they would be capable of achieving. For example, “Kids say, this is where I’ve grown up, this is as good as I’ll ever get” (5) and “you’ve got homes that just expect them to get a job, any job will do” (7). One teacher spoke of being in a local department store “and you see kids who were really good at school and you’re thinking they would have gone and done some further study to get a different job” (9).

Finally, the remote locality of the area and the financial difficulties faced was perceived as a barrier. “It’s been an enormous load for them to carry the transport, not just the cost but the time it takes” (13) and “lack of money is a barrier for them all and the further they go in education the bigger that barrier becomes” are two examples. Participants also talked about parents’ expectations of “their children to be

more self-sufficient” (27), which they said tended to preclude them from being able to attend and pay for a tertiary education.

### *Barriers within the Individual*

A lack of motivation to engage in career decision-making was expressed. “It doesn’t even enter into the psyche of a lot of kids until very close to when they’ve got to make a decision” (10). The students’ inability to persist was also perceived as a barrier. “They don’t have the will to finish [school] ... so they can take that career path” (3).

Some participants named low self-esteem as a barrier to sound career decision-making. They cited things like a lack of “belief in themselves” and a sense of “I’m a failure, I couldn’t do that” (12) that have led students to “undervalue their abilities” (21). Participant 8 declared that this barrier meant students did not have “the confidence to look at something and say yes, that’s good, but at the moment they can’t get past their belly buttons!”

Students’ failure to set goals for themselves was viewed as another issue of concern. A tendency to float along without any set plans in mind was described. For example, “many of them think well you just come along to school and just do what ever it is you do, have a good time maybe learn something ... then someone will give you a job” (14). Similarly, “they see it as being something that they will decide about at the end of grade 12 and by then they have either made the wrong subject selections or it’s too late” (22).

A poor work ethic was also viewed as a barrier. “A lot of these kids come from families where the income is provided by the government ... unemployment benefits or sole parents benefit ... so they really don’t have a notion of actually working to earn money” (22) exemplifies this. Other barriers mentioned to a lesser degree included a lack of decision-making skills and unrealistic expectations.

### *Knowledge Base*

Some participants felt that students' lack of awareness about "a lot of the careers that are out there" (23) was a barrier to sound decision-making. One said that "they need a lot of education about what options they can take" (18) while another believed students "take a very narrow view [and] focus upon a particular area without looking and exploring career areas" (25). In a similar vein, others spoke of students "not knowing where they can go to access information" (26) about career options despite the situation that "there is plenty of information around" (10).

Not "enough diversity in the subjects they can choose from" (29) and the need for "more emphasis or more time to allow them to select their subjects" (24) were also discussed in response to this question. A few participants said that learning difficulties were a hindrance for many students at the school. For example, "their numeracy and literacy will let them down a lot ... if they were going on to university a lot of them wouldn't cope" (23). Similarly, some people felt students were ill prepared for university in the sense that "they're just a small speck in a big pond once they enter that scene and it's pretty tough" (1). Misconceptions about what jobs entail was seen to "create a barrier" (17) as well: "they expect to get a job after the first week and they want to be the boss" (24).

### *Summary*

The general perception about barriers to making sound career-related decisions centred on students' disadvantaged circumstances in terms of where they live and how they were being brought up. Their narrow view of life, poor understanding of the world of work, and the high incidence of unemployment to which they had become accustomed, were viewed as definite drawbacks. Deficiencies regarding various personal skills from which to draw upon in order to overcome such shortfalls were deemed to be a further problem for these students. One participant summed up her concern over the inability of teachers to impact upon these barriers by saying: "A lot of these kids are living in a society that we can't even begin to comprehend. The tinkering on the outside we do is almost like mosquito bites to them" (8).

### *Confidence*

The responses to Question 4 produced two themes, which are summarised in Table 4.4. The first theme compiles participants' perceptions about the level of confidence with which students approach career decision-making tasks. The second theme pertains to various characteristics of the students that were seen to affect confidence levels.

Table 4.4  
*Overview of Themes Generated by Question 4*

| Confidence                                  |       |        |
|---|-------|--------|
| Themes and Sub-Themes                       | Times | People |
| <b>Level of Confidence</b>                  |       |        |
| • No confidence/Lack of confidence          | 18    | 15     |
| • Some confident but others lack confidence | 17    | 14     |
| <b>Characteristics Affecting Confidence</b> |       |        |
| • Complacency/Resignation to unemployment   | 11    | 15     |
| • Overconfident/Unrealistic                 | 7     | 5      |
| • Work ethic                                | 4     | 3      |

#### *Level of Confidence*

Fifty percent of interviewees estimated that students were lacking in confidence. Comments that epitomise this viewpoint include: "I just feel that kids feel down, down about themselves and their future" (11), "at this school I'd probably say fairly low" (16) and "I don't think many of them have much confidence about it [career decision-making] at all" (22). Another 40% of participants said that, while a majority of students lack confidence, some "are generally fairly confident" (17). For instance:

Those who do know what they want to do, they have a belief in themselves that they can do it. Even if they don't reach that goal at least they've got some sort of direction ... but I think at the same time a lot of them just have no idea and don't think they're capable of doing it. [They say,] Oh well, I've failed at school so I'm dumb" (26).

### *Characteristics Affecting Confidence*

There were many people who cited a sense of complacency amongst students, which was seen to adversely affect their confidence toward career decision-making. “A lot of them just go with the flow” (17) was one description and the “expectation was leaving school and be unemployed” (27) was another. Indeed, several participants quoted students as saying things like, “Oh well, I’ll just go on the dole” (26) and “I’m not going to find a job anyway so what’s the point of doing anything at school?” (13).

Other attributes of the students that were discussed in conjunction with confidence levels included what one participant referred to as “unfounded” (13) confidence. This sub-theme comprised remarks about students being somewhat overconfident in that “they’re unrealistic, they think they can control the world and the employers” (4). One participant, for example, expressed a concern about “the number of kids who come to me and say I want to be a marine biologist” (21) saying that she doubted whether this goal was attainable for them.

Still other characteristics mentioned to a lesser extent were comments about family circumstances that involved chronic unemployment. These backgrounds were deemed by some participants to lead to a poor work ethic. For example, “I don’t think enough of them are used to the idea that they are going to have to work hard, really hard” (27).

### *Summary*

In general, the responses to Question 4 pointed toward a total lack of confidence in career decision-making as being the case for, at the very least, a vast majority of students. Most people went on to comment about what they believed to be the reasons behind such poor confidence levels. These mainly entailed complacent attitudes, unrealistic views and poor work ethic. Participant 23 illustrates the typical perception with the statement: “Some are keener to get a job, to get work experience, to get out there and make it happen. They seem quite confident. Others are in limbo. They’re very lazy and hard to motivate a lot of them.”

*Aspirations*

Responses to Question 5, about the aspirations that young people at the school aim for, accumulated under two themes (see Table 4.5). The first comprised the more general comments that participants made about the aspirations of students at the school. The second theme encompassed the specific types of goals to which students were perceived to be aspiring.

Table 4.5  
*Overview of Themes Generated by Question 5*

| Aspirations                      |       |        |
|----------------------------------|-------|--------|
| Themes and Sub-Themes            | Times | People |
| General Comments                 |       |        |
| • Hopelessness/Dole/Drug culture | 9     | 14     |
| • Two groups of students         | 4     | 10     |
| • Spectrum of students           | 14    | 10     |
| • Unrealistic aspirations        | 10    | 9      |
| • No aspirations                 | 8     | 8      |
| Specific Aspirations             |       |        |
| • Get a job/TAFE/Apprenticeship  | 21    | 19     |
| • Material goals                 | 18    | 10     |
| • Short term goals               | 10    | 9      |
| • Similar pursuits to parents    | 8     | 7      |
| • Pregnancy                      | 5     | 5      |

*General Comments*

Just under half of the participants interviewed painted a disturbing picture in response to this question. They described the students as “lost [because] they can’t see much future” (11). Likewise, others declared “there is just no hope” (16) and “I pick up a lot of negativity from the students. It’s a complete apathy about what’s out there” (28). Another person put it thus: “It’s like a poverty cycle. It’s a poverty trap. They might think about doing other things, like going to uni, but they know that they can’t afford it” (22). Moreover, five interviewees talked about some students whom

they believed aspired to drug dealing while collecting unemployment benefits. For example, "You'd be horrified how many of them say, oh I'll be on the dole. They're happy enough to state that. They're often the ones that are into the drug culture because they see themselves as having a future there" (8).

The majority of participants made a general comment about the aspirations of the student body as a whole. There were those who described two types of students: those who are sure about their goals, which are quite high and those whose goals are quite low or non-existent. For example, "There's the two ends of the scale ... there's the group aiming for tertiary entry ... then there's the group that are aiming for either to get a job or become unemployed" (21). Others described a "mix of kids" (10) ranging from those "who want to leave school and go on the dole and smoke drugs ... [to those] whose goal is to leave school and have a baby, ... do a university degree and become a doctor ... [or] leave school and do a TAFE course and go into hospitality" (14).

Still more general comments highlighted once again the unrealistic nature of students' mode of thinking about careers. There were concerns expressed about their "rose coloured ideals about life" (18) and the problem that "they seem to be aiming much higher than their results seem to suggest they're likely to achieve" (25). Finally, several people spoke of "a large number of students who do not have aspirations, full stop" (28). Statements like, "they just go from day to day" (13) and "I think a lot of kids just coast" (12) were common.

### *Specific Aspirations*

Many of the participants expanded upon their broad views of students' aspirations by mentioning various specific goals. A majority of the sample had the impression that most students who were aiming for something in particular, were either aspiring to gain employment once they left school, do a course at TAFE, or obtain an apprenticeship. For example, "the general population's aspirations are to get a job" (18), "a lot of them will leave school and go to TAFE" (13) and "a lot of them look at apprenticeships and going into trades" (26). Many of the interviewees also spoke of the material nature of the goals expressed by students. These comments almost exclusively included the aspirations of buying a car and a house as being the

prime goals. “Happiness is equal to having a job and like material things like a car and a house” sums up this group of responses.

Approximately one third of participants made reference to students’ tendency to live from day to day. Goals were viewed as being extremely short term in that many students were deemed to think only “to the next lunch break” (3) or to think “mainly about what they are going to do on the weekend” (6). A smaller number of interviewees spoke about the aspirations of the student body being linked to what parents had achieved. For example, “they look at where their parents are and expect they’ll be in the same place” (12). Finally, five people expressed a concern about the goal to “leave school and have a baby” (14). They questioned, for example: “What motivation is there for them to try and achieve, to aim higher?” (24) since students had said things like, “the more babies you have, the more money you get from the government” (18).

### *Summary*

In a similar vein to the responses about confidence levels, participants typically spoke of students as having either very low or non-existent career aspirations. Moreover, some participants believed that the minority who were aiming high, were doing so in an unrealistic manner. The main consensus was that the goals students did set for themselves were usually quite simplistic like getting a job or an apprenticeship with no awareness of how to break down the steps needed to achieve such generalized notions. Added to this was a concern that tended to filter through many of the participants’ responses to Question 5 that, apart from not having much experience with goal setting in the first place, students lacked the belief in themselves to actually reach career-related goals. For example: “A lot of them think they would like to do things but think that they couldn’t, that kids from this school don’t do things like that at all. They don’t aspire to great heights I’ve noticed and some of them could but they just don’t think it’s possible” (22).

*Addendum*

This section provides a summary of responses to Question 6, which gave participants the opportunity to add anything that they felt was important in regard to the impending career education intervention. In many cases, people simply reiterated the most heartfelt or most salient points they had already made, and four interviewees declined to add anything. Thus, there were few novel issues discussed at this point in the interviews. Table 4.6 outlines the themes generated.

Table 4.6

*Overview of Themes Generated by Question 6*

| Addendum                           |       |        |
|------------------------------------|-------|--------|
| Themes and Sub-Themes              | Times | People |
| Circumstances                      |       |        |
| • Narrow career outlook            | 24    | 19     |
| • Background                       | 18    | 13     |
| • Youth problems                   | 8     | 6      |
| • Diversity                        | 4     | 3      |
| Personal Development               |       |        |
| • Skills and confidence            | 18    | 14     |
| • Persistence/Effort               | 11    | 11     |
| • Sense of personal responsibility | 8     | 5      |
| • Relative perspective             | 6     | 3      |

*Circumstances*

The need to “broaden kids’ horizons” (10) was emphasised by many participants. Recommendations included: “get the kids at risk somehow to show them that there is something out there for them” (17), “allow them to comprehend the idea that there are opportunities for them and that there are paths for them” (14) and “get them to think a little more laterally” (8). Moreover, the researcher was urged to consider the students’ family circumstances when designing the intervention. For example:

Be aware that the thinking of a lot of the kids here comes from their backgrounds, which is often the case that it is really mixed up and besides that a lot of the parents here haven't gone past Year 10 .... and don't value ongoing education very greatly at all (10).

Various problems amongst youths in the area were also nominated as issues to be aware of when formulating the intervention. These ranged from poor academic achievement: "kids leave here and they've failed every subject ... you're not going to get a job even at the local factory with those kinds of marks" (20) to "dangerous behaviours" (13) and youth unemployment. In addition, the diverse array of cultural differences was discussed. Samoan, Asian and Serbian ethnic backgrounds are but a few of those mentioned. "I know there's a Muslim population within the area ... a transient population in some respects ... a lot of immigrants... there's really an unusual mix of students" (21) exemplifies these accounts.

### *Personal Development*

Students' overall lack of self-confidence was highlighted as an issue that needed to be addressed. For example, it was suggested that "we have to somehow work on their self esteem and confidence and make them believe in themselves, that they can do things, that they can go places" (17). Many considered students' personal development in terms of their self-confidence and skill building as being inextricably linked to career decision-making. "Certainly their decision-making skills and their time management skills are just not very good" (22) and "they have to have the courage to make a decision and that's why I'm saying they need other developments to happen" (8) illustrate these assertions.

Several participants indicated that students had a tendency to be "lazy people with no motivation" (1) and that they lacked perseverance. This concern was expressed in a variety of ways including: "there is no stickability" (22) and "they need to give it their best shot and that's missing. ... A lot of kids may not be an 'A plus' but they could get a 'Sound' but they miss out on 'Sounds' because they don't put in any effort" (10).

A lack of responsibility for their own behaviour was also nominated as something to be aware of in relation to working with these students. "Maybe learning

something about acting like a responsible person in society because a lot of boys their attitude and behaviour is appalling” (18) was one such remark. Other comments of this nature consisted of statements like: “they have got no respect for their teachers” (6) and “in the world of work you can’t turn up late ... you just can’t not do your work on time” (22).

The final sub-theme generated by responses to Question 6 entailed comments about students’ unrealistic view of themselves in relation to other people their own age. There was a concern that those who do well at the school do not achieve as they would expect after leaving school since others come from schools with higher academic standards. For example, “they actually get into uni and then drop out because I think once they get there, there’s no leniency at all and I think that most of our kids here have been used to that and so they fall over in a big way” (12).

### *Summary*

In the main, participants stressed the need to be aware of the particular type of clientele for which the intervention would be designed. They highlighted the narrow world view, and poor social and academic skills that these young people typically exhibit as vital characteristics to be taken into consideration. Many people voiced a bleak view in terms of the future for these students. According to Participant 18:

They’re just clueless. They have no idea. They just think it’s all going to fall into place. But it’s so hard now, especially in Logan where unemployment is so high and there’s lots of kids here with learning difficulties that just aren’t going to make it. Well labouring jobs, yeah, but they think they’re going to get office jobs.

### *Recurrent Themes*

The following recurrent themes are considered to be of particular significance to the present study because they encompass the predominant issues raised across the six questions. Specifically, this “big picture” assessment of the data involved the input of numerous text stems corresponding with existing thematic groupings and frequently raised topics of discussion. A large variety of words were investigated

using the NVivo qualitative research search tools. These included base words such as real, self, employ, confidence, skill, outlook, decision and problem. Only those topics that were raised by 10 or more participants out of at least three of the six question groupings were accepted. This text search process uncovered five overarching themes, which are listed in Table 4.7 in order of strength according to the number of different people who discussed them.

Table 4.7

*Recurrent Themes Generated Across Questions 1-6*

| Recurrent Themes       |       |        |
|------------------------|-------|--------|
| Themes                 | Times | People |
| Self-confidence        | 74    | 23     |
| Life/Social skills     | 54    | 20     |
| Decision-making skills | 56    | 17     |
| Unemployment           | 30    | 10     |

*Self-Confidence*

Over 75% of the sample repeatedly referred to students' lack of self-confidence. Many spoke of the need to boost their self-image, self-worth or self-esteem. For example, Participant 17 stated in response to Question 6: "Somehow we've got to change their mind set. We have to somehow work on their self-esteem and confidence and make them believe in themselves". Another person spoke of self doubt as being a barrier to sound career decision-making when asked Question 3: "That self doubt takes over and in the end you'll hear them say 'Oh, I knew I couldn't do it.' It's a self-fulfilling prophecy" (12).

There were also some comments about overly high confidence levels that were deemed counterproductive: "When it comes to making a decision I think they're over confident and they think they're just going to march straight out of the classroom ... they think they can control the world and the employers" (4). Likewise, Participant 15 stated: "Their confidence level sometimes is a bit of false bravado. Is it really how confident they are?"

*Life/Social Skills*

Two thirds of the sample spoke about the need to teach “life skills” to these students. This was expressed in a variety of ways (i.e., people skills, interpersonal skills, communication skills, social skills) but generally was considered a means by which career decision-making and career prospects could be enhanced. Indeed, in response to Question 2, Participant 14 believed it was important to be “equipping kids socially with the skills they need ... to access jobs and careers that aren’t traditionally associated with their socio-economic group”. Likewise, but in response to Question 5, Participant 24 proposed that students needed “job skills, life skills, all those things to prepare them for the workplace”.

Along with these types of comments were others that involved the need for students to learn about the skills that they already possess in order to help them prepare for career decision-making. For example, one participant felt they needed to be made aware of “things like their skills and weaknesses, their interests, their personal qualities so they can attempt to make important decisions about where they want to go in the future” (20). Another comment illustrative of this view was made by Participant 28 who referred to students’ “very vague idea of what skills they have and how they can be applied in terms of a real world job” (28).

*Decision Making Skills*

This recurrent theme, encompassing repeated references to the need for students to be taught decision-making strategies, was generated by over half the participants. Some spoke of a lack of understanding about the actual process of decision-making. Participant 22, in her response to Question 2, epitomised this view: “I think it should start on decision-making skills generally because the students here don’t seem to be very good at making decisions about anything, let alone a career”. Others commented on the poor decision-making habits adopted by these students. For example, Participant 3 replied to Question 4 by stating, “I don’t think a lot of them approach career decision-making as such rather than they just end up where they end up”.

Parents were also mentioned as poor role models for their children in that “a lot of the kids don’t have the backup at home to make decisions” (5). In addition, many of the participants made comments about the lack of guidance that these students tended to receive from their parents in terms of making career-related decisions. For instance, Participant 19 stressed in response to the last question that students needed help to make decisions “especially because they don’t get that from their parents”.

### *Unemployment*

The last recurrent theme to emerge from the data involved repeated accounts of the high level of unemployment in the area and its perceived effect on students’ attitude toward career decision-making. Unemployment was seen as a barrier to sound decision-making. For example, “I think a lot of our students live in a very isolated world. Many of their parents are unemployed or have very little employment so they don’t really understand what’s out there” (17). It was also deemed detrimental to self-efficacy as participants stated things like, “I think some kids might even undervalue their own abilities because they see unemployment as being such a big thing in this area that they really don’t recognise the skills that they do have” (21). Unemployment was also blamed for low career aspirations: “They’re lost. They can’t see much future. They know about the employment rate, they see it” (11). Indeed, students were thought to be “so brow-beaten by the idea that the whole family’s unemployed ... [that they believed] they’re going to be unemployed too” (22).

## Discussion

Study 1 set out to determine the extent to which career education was taking place at the school, and to discover any deficiencies interviewees believed existed in terms of students’ career-related training. Taking the answers to the six questions into consideration, and focusing particularly on the recurrent issues raised, many clear-cut issues and recommendations were revealed. The perceived gaps in career education provision were established and additional career education that was deemed necessary for these students was ascertained. This study identified specific

skills that students lacked, and captured rich data describing this sample of Year 10 students. Indeed, the context-specific findings of Study 1 afforded sound guidelines to inform the design of a suitable career decision-making education program for these young people in three ways. First, it was able to establish what career education was occurring, and thus avoid duplication. Second, it induced specific shortfalls in these students' career-related education that needed to be addressed, and third, it provided the researcher with a clear portrayal of the students and their environment to further guide the design of the intervention that would be devised for them.

An understanding of the career education that was already in place at the school was gained from the analysis of answers to Question 1. Formal programming, apart from some career-related activities embedded in the curriculum, was found to be predominated by vocational education. This means students who wished to leave school and gain employment rather than those intending to pursue post secondary education were catered for. The Jobs Pathway program was seen as useful but underutilised, and the two Guidance Officers, one of whom was employed part-time, were considered hard pressed to see students more than once a year. Assistance with subject selection for the Year 10s takes place just two weeks before choices have to be made and thus was seen as being "too little too late really" (22).

When viewed collectively, the responses to Question 1 portrayed an inadequate level of career education service provision at the school. Participants' opinions in this regard paralleled remarkably with similar standpoints put forward in the literature (e.g., McMahon, 1997; McCowan & Hyndman, 1998). Dixon (2001) highlighted this view when concluding "career and vocational programs suffered from a total lack of rationale and a lack of any coherent, planned approach" (p.21). Unfortunately, despite the fact that "about \$3.5 billion is spent annually for recurrent purposes by governments" (Dumbrell, 2000, p. 4) on VET in Australia, little is known in terms of outcomes. It appears both researchers and teachers agree that there is a "need for a comprehensive career education program as a part of the core secondary school curriculum, [which is] appropriately resourced" (Patton, 2000).

When asked directly about what was needed in a program to help students make better career decisions, the participants put personal development first. They overwhelmingly felt that the attributes of self-confidence, persistence, motivation and social skills in general, required much enhancement. Again, this view reflects

many of those expressed in the literature. For example, Bessant (2002) maintains that one of the solutions to high levels of youth unemployment in Australia is for educators to “provide experiences that present opportunities to young people for citizenship, for full involvement in important social experiences and relationships, to be effective, autonomous and competent in our social, political and economic worlds” (p. 48). Likewise, Irving and Raja (1998) purport that “career education has to become holistic in nature” (p. 30) by focusing beyond simply preparing students for work. These authors stressed the need for career education to empower students by assisting them to develop the personal skills necessary to take control of their own lives.

Students’ naivety with regard to the world of work was also highlighted in the present study. Unlike Carpenter and Inkson’s (1999) sample of New Zealand high school students, who were found to be “well attuned to the emergent realities of the new careers era” (p. 29), the present sample were deemed to “have a very limited view of the world of work” (17) “with a very vague idea of what skills they have and how they can be used in terms of a real world job” (28). They were also seen to have little understanding of the array of careers in existence. Their unrealistic view of employers’ expectations and unrealistic conception of their own ability levels and subsequent career prospects were stressed as well. Indeed, Drummond and Hansford (1992) found that their sample of pregnant teenagers living in a low socioeconomic neighbourhood in Australia had unrealistic aspirations. They discussed this as being a reflection of “the general attitude of many teens, who want to be in a profession even if they do not have the academic and economic resources necessary to be successful” (p. 168). It appears that students in Australia are not dissimilar to many other high school students in this regard. For example, the young people in an American study (O’Brien, Dukstein, Jackson, Tomlinson, & Kamatuka, 1999), which tested a career education intervention entitled the Career Horizons Program, were also noted as having unrealistic career aspirations.

The majority of other responses to Question 2 centred around the need for training in goal setting and decision-making skills and again, this is mirrored the literature. Indeed, Lent, Hackett, and Brown (1999) maintain: “Efforts to impart effective goal-setting skills — and, in particular, to help students to frame their goals in the most facilitative terms (e.g., with clarity and specificity) ... are clearly

warranted from an SCCT perspective” (p. 306). Moreover, many authors have emphasised the need for career education to have this skill focus rather than a knowledge or information giving focus. McMahon (1997) put it thus:

The world of work is constantly changing and relevant knowledge quickly becomes outdated. Rather, a more enduring effect will be gained by empowering students with process skills, such as research skills, communication skills, decision-making skills and transition-coping skills, all of which are needed to effectively deal with the demands of career development (p.139).

There were three types of barriers perceived to be obstructing these students from making sound career decisions. First, their disadvantaged upbringing was highlighted. Aspects of this upbringing seen to be of a hindrance included their parents’ disadvantaged situation, discrimination about the area they live in, and unemployment. Second, barriers within the individual tended to be reflective of issues discussed in response to Question 2. They included a lack of persistence, low self-esteem and poor goal setting and decision-making skills. The third type of barrier also mirrored topics previously mentioned. These involved a lack of understanding about the world of work and a limited knowledge of career options.

It is interesting to note that these three types of barriers perceived as hindering students’ career-related decision-making (i.e., background, personal qualities, and knowledge) are aligned with the three theoretical components originally proposed by Lent, Brown, and Hackett in 1994 as the “complexly interactive sources of influence on career development” (101), namely, contextual affordances, person inputs, and learning experiences (see SCCT choice model, Appendix A). These authors (2000) have subsequently presented a restatement of their environmental hypotheses along with a review of career barriers research making detailed suggestions for future research on these factors. More recently, Lent et al. (2002) reported findings of a qualitative study using a college student sample wherein contextual and person factors were seen to influence the implementation of choice goals. Learning experiences were found to be supports rather than barriers in this study, since they led to the clarification of “interests, values, and skills in relation to particular occupational fields and work tasks (p. 69). It appears the present study has provided further evidence for these three types of barriers, namely contextual, personal and

experiential. However, in the latter case, the present interviewees pointed toward a shortage of learning experiences from which these students could develop an accurate understanding of themselves and the world of work.

Question 4 elicited two overall responses. The first of these pertained to perceived levels of confidence. Most people estimated that students approached career decision tasks with either no confidence at all, or they spoke about two cohorts of students at the school: those with high levels of confidence, who were in the minority, and the majority, who exhibited low confidence levels. The characteristics of students deemed to affect confidence levels included complacency, a sense of resignation to unemployment, false bravado and poor work ethic. The participants also painted a grim picture when talking about the aspirations that these students held. Comments were generally pessimistic nominating things like a sense of hopelessness and the drug culture within the students' community as being detrimental to their goal setting behaviour. Moreover, many felt that if goals were set at all by the students, they were either unrealistic, simplistic or very short term.

These factors have been identified in the literature in the work of Friedman and Mann (1993), for instance, who found lower levels of confidence and higher evasiveness and complacency amongst Australian adolescents compared to Israeli students. Indeed, the sense of hopelessness depicted in the present study is exemplified by Mann et al. (1989) contention that "some adolescents develop a negative or even cynical attitude about the possibilities of influencing important decisions, and therefore become detached and apathetic" (p. 273). Likewise, the poor work ethic typically exhibited by these adolescents is consonant with the work of Hill and Rojewski (1999) who maintain that "issues such as academic difficulties or limited economic opportunity can adversely affect at-risk youth career goals" (p. 279). This in turn, is proposed to adversely affect the development of a positive work ethic, as defined by "interpersonal skills, initiative, and being dependable" (p. 267). This seems to be the case with the present sample since they were broadly described as lacking confidence in their ability to succeed in life: "It's pretty shocking. They just don't see a future. The future is boring or it brings heartache. There is just no hope and they can't be bothered to try" (16).

Question 6, which allowed participants to bring attention to anything that they felt was important for the researcher to be aware of, did not elicit new information

about the students. Thus, it did not form an “addendum” as was anticipated. In the main, participants used this opportunity to highlight the issues that they had already expressed and wished to further emphasise. Two prevailing topics were discussed. In the first instance, participants reiterated the problems faced by students at the school. These problems encompassed a narrow or pessimistic view of careers, a family background that was deemed generally unsupportive of career planning, poor academic achievement, risk taking behaviour and high unemployment rates.

The second main issue emphasised by participants in response to Question 6 was their belief about students’ crucial need for personal development. The attributes of self-confidence, persistence and a sense of personal responsibility were again accentuated as lacking amongst this sample of high school students. Many participants repeated their plea for the career education program to implement strategies to enhance self reflection and personal growth. For example, Participant 13 stressed a need to help “kids to realise what their personal talents are and to develop those talents ... [as this is] a big part of career decision-making.” Indeed, Participant 8 said in conclusion, “You’ve got to develop their soul. You’ve got to develop their being. You’ve got to help them find the strength to overcome the things that have been done to them.”

Finally, an overall perspective on these six separate analyses of the questions was gained via the examination of the recurrent themes elicited from the entire data set. This revealed four topics that were discussed repeatedly by the interviewees. These were the fervent issues to emerge with regard to the type of career decision-making education that participants felt the students needed.

First and foremost were the two interrelated issues of students’ lack of self-confidence and poor social skills. A general sense of an inability to “think or speak positively about themselves” (12) was repeatedly expressed as an attribute requiring concentrated attention. Moreover, people often talked about the program needing to be more comprehensive and holistic in its approach rather than simply aiming to help students with their career decision-making. A need for personal development in general was the widely expressed view. This incorporated discussion about the need to enhance self-confidence and to provide life skills training. A comment made by Participant 14 serves as an illustration: “You need a program that talks about long

term goal setting, not just for jobs but for yourself as a person, personal goals, educational goals, those sorts of things”.

The third issue frequently mentioned by participants concerned the need to provide specific training in decision-making. Comments generally fell under two main areas in this regard. Many people felt that students needed to be made aware of the actual process of decision-making, whether it be to decide about what to do on the weekend or what subjects they wished to do in Year 11. Others expressed the need to educate students about the decision-making habits that can either assist or hinder sound decision-making. Overall, participants felt that educators “need to be involved more in helping kids to make good decisions about lots of things in their lives” (27).

The last recurrent theme to emanate from the data was the perception of a need to be aware of the spectre of impending unemployment among these students and how this was adversely affecting them. High rates of unemployment were seen as a barrier to sound career decision-making. Participants frequently referred to this aspect of the students’ contextual circumstances as being a major factor leading to low levels of confidence in their capacity to find work, and thus a reason for students’ general complacency about goal setting and career search behaviour.

### *Implications for Intervention Design*

Study 1 clearly established that the students for whom the career education intervention would be designed were in need of training in terms of personal development in order to enhance their career development. Their confidence was considered decidedly low, they did not appear to have positive expectations about their futures in terms of career-related pursuits, and they were not setting achievable goals for themselves. They were also perceived as being hindered by a variety of aversive contextual affordances (disadvantaged background, high unemployment, low socio-economic area), unfavourable person inputs (low self-efficacy, low persistence, false bravado, poor knowledge of the world of work, lack of goal setting and decision-making skills, and lack of realism), and insufficient learning experiences (repeated academic failure, poor role models, and insufficient encouragement or guidance from significant others). Indeed, the picture that was

being painted of this particular cohort of students was one resembling a negative loop through the SCCT choice model (see Appendix A). All these attributes combined did not auger well for such students' capacity to cope with the demands of career decision-making and planning in the current context.

The early propositions made by Lent, Brown, and Hackett (1994) in relation to the way in which "opportunity structure variables ... enhance or constrain volitional control in the choice process" (107) are certainly pertinent to the present study. Although three of the questions posed in the interviews were generated with the SCCT theoretical standpoint in mind (i.e., Question 3 on confidence, Question 4 on barriers, and Question 5 about goals; see Appendix C), participants highlighted the importance of person inputs such as confidence, persistence, knowledge and skills, when asked to give their own opinions as to what they believed the career education intervention should address (i.e., Question 2). Furthermore, the interviewees chose to reiterate these personal qualities in response to Question 6, while also highlighting the negative aspects of students' opportunity structure at this juncture.

The SCCT choice model was therefore deemed a suitable framework to guide the design of the career education intervention for this sample of students. It was used in the hope that, just as negative influences can constrict career choice behaviour (Lent et al., 1994), the reframing and amelioration of some of these drawbacks may result in efficacy enhancing experiences, which in turn, could lead to more investment in such activities as goal setting and decision-making in these students. Additionally, by making this model of career choice behaviour explicit in its use as the guiding framework for the course, students could benefit by a heightened awareness of the variety of influences upon their career development as well as an understanding of the key skills essential for a positive approach to career-related tasks. For example, when focusing on the person inputs part of the model (see Lesson 3 in Chapter 6), students can be taught how to re-evaluate their efficacy beliefs and question "foreclosed occupational possibilities" (Brown & Lent, 1996, p. 360). Thus, the use of a simplified version of the SCCT career choice model was considered a potentially effective strategy to guide the construction of the career education intervention. It should be noted at this point, however, that inspiration for the use of such a framework was also drawn from a study by Chartrand and Rose (1996) who developed a similar model in order to "translate the theory [SCCT] constructs into terms and language that would be familiar to participants" (p. 346).

Study 1 also informed the way in which the career education intervention would be evaluated by specifying the particular aspects of students' career development that were in arrears (e.g., low confidence, narrow view of the world of work, lack of decision-making and goal setting skills, complacency). Since these were the factors that those close to students believed were in need of amendment, it followed that such variables should be the ones measured before and after the course. Thus, the effectiveness of the intervention in so far as its capacity to address these important issues, could be quantified in these terms.

The key career development variables chosen were closely related to the specific topics of concern discussed by the participants in Study 1. Data gathered on levels of career maturity, career decision-making self-efficacy, and career indecision were deemed effective indicators of the major aspects raised in the present study. These instruments would provide, for instance, reliable measures of students' career decision-making attitudes and world of work knowledge, their confidence levels and goal setting intentions, and their decisiveness or apathy toward career decisions. Moreover, the measures of decision-making behaviours chosen (i.e., maladaptation and resoluteness) were anticipated to capture levels of decision coping patterns such as complacency, or resilience and persistence, which were identified as problems to be addressed in the current career education intervention.

Despite the clear indications of students' needs in terms of career education intervention that were supplied by the present qualitative study, there were some issues raised that could not be met due to the practical limitations instituted by the school (see Chapter 6). For instance, appeals for work experience initiatives could not be accommodated within the time allocated for the course, and obviously other needs could only be met by the community at large. This latter band of topics included things like the local drug culture and inter-generational unemployment amongst some families that were important dilemmas raised by the present participants as requiring direct attention, but were beyond the scope of the intervention to be undertaken. Nevertheless, the rich description of the circumstances within which these students resided provided the researcher with vital information to guide the planning of lessons and activities so that they were sensitively geared toward the characteristics of this particular cohort of students.

## CHAPTER 5: STUDY 2

## Cross-Sectional Study

This study aimed to extend previous research findings by testing a range of hypotheses using a cross-section of data consisting of three key career development variables gathered from high school aged participants. These well-established constructs, namely, career maturity (CM), career decision-making self-efficacy (CDMSE), and career indecision (CI) have attracted much research attention in the past, although they have rarely been studied in unison. Moreover, adult convenience samples prevail, especially in relation to CDMSE and CI. One of the aims of the present study was therefore to explicate associations amongst these three key variables as they applied to a sample of adolescents. Additionally, this study aimed to achieve a better understanding of CM, CDMSE and CI respectively by examining the explanatory power of specific combinations of variables under investigation.

In addition to these fundamental objectives, CM, CDMSE and CI were explored further by investigating their relationship to decision-making behaviour. Measures of maladaptive (M) and resolute (R) decision coping patterns were employed to examine the behavioural tendencies that individuals typically engage in when approaching career decision-making tasks. This procedure was included in the study to augment the extant literature as opposed to merely reporting differences in CM, CDMSE and/or CI (Chartrand & Rose, 1996). More specifically, appeals for clarification of the link between CM and decision-making style (Raskin, 1998), CDMSE and performance (Robbins, 1985; Taylor & Popma, 1990), and the identification of career development patterns in conjunction with CI (Osipow & Fitzgerald, 1996) were investigated.

Relationships between CM, CDMSE, CI, M and R and other characteristics, namely, gender, students' part-time work experience, school achievement level, certainty of future plans, performance goals and parents' education and employment status were also examined. These latter demographic/contextual variables were scrutinised to explore the influence of background contextual affordances (Lent et al., 1994) on the career choice process of adolescents.

### *Research Questions and Hypotheses*

The following three questions and accompanying hypotheses directed systematic data analysis of the variables of interest and provided a framework for the discussion of findings. Hypotheses related to the first question are concerned with relationships amongst the continuous variables. These are followed by the second question and a group of hypotheses that examine differences on these variables according to the contextual/demographic variables. Prediction of CM, CDMSE and CI respectively form the set of hypotheses related to the third question.

1. Will the relationships amongst CM, CDMSE and CI established previously in the literature hold for the present sample of adolescents and will the measures of decision-making behaviour display anticipated links with these key variables?
  - 1.1 Consistent with findings by Luzzo (1996b), it is hypothesized that adolescents' CM attitude scores will be positively related to CDMSE in accord with the relationship found for college students ( $r = .45$ ).
  - 1.2 Consistent with previous findings (see Patton & Lokan, 2001), adolescents' levels of CM are expected to be negatively related to CI as has been found with undergraduate students.
  - 1.3 CM is expected to be negatively related to M and positively related to R since higher levels of CM should reflect more adaptive decision coping behaviour as postulated by Savickas (1997).
  - 1.4 Consistent with findings reported by Betz, Klein, and Taylor (1996), CDMSE scores and levels of CI are hypothesized to be negatively correlated as for college students ( $r = -.56$ ).
  - 1.5 CDMSE is expected to be negatively related to M and positively related to R since higher levels of CDMSE should reflect more confident and persistent decision coping behaviour. This is based on Lent, Brown, and Hackett's Hypothesis 8A (1994), which states: "There will be a positive relation between self-efficacy beliefs and career/academic performance" (p. 100).

- 1.6 CI is expected to be positively related to M and negatively related to R since less indecision may be associated with more adaptive decision-making processes (Hall, 1992).
2. What is the influence of demographic and contextual characteristics on students' level of career development and decision-making behaviour?
  - 2.1 Adolescent females are expected to have higher CM scores than males as has been found by a majority of studies (Patton & Lokan, 2001).
  - 2.2 Consistent with findings by Creed and Patton (In press), those with work experience are anticipated to have higher scores on CM than those without work experience.
  - 2.3 Achievement levels are expected to be positively related to CDMSE in accord with meta-analytic findings reported by Multon, Brown, and Lent (1991).
  - 2.4 Students who have specified their performance goals for after Year 10 are expected to report higher levels of CDMSE than those who have yet to decide upon their goals. This is based on a personal communication with Lent (2001) who speculated "that the higher the decision-making self-efficacy, the more likely one would be to make a career choice."
  - 2.5 In line with a study of college students (Peterson, 1993b), it is expected that adolescents' mothers' level of education will positively relate to CDMSE.
  - 2.6 Parents' employment status is expected to be unrelated to adolescents' CM since previous studies have found little or no relationship between CM and socio-economic status (e.g., Super & Nevill, 1984).
3. What is the role of R, M and specific combinations of the variables under investigation in further explaining CM, CDMSE and CI respectively?
  - 3.1 It is expected that M, R and the other variables examined will be predictive of CM, over and above the contribution of CDMSE and CI. This is anticipated to extend previous findings showing CDMSE to be a significant predictor of CM attitudes (Luzzo, 1993b) and CI as predictive of CM (Rojewski, 1994).

- 3.2 It is expected that M, R and the other variables investigated will predict CDMSE beyond the contribution of CM and CI. This hypothesis is formed to explore the contribution of decision-making style and contextual variables to adolescents' confidence in their career decision-making ability.
- 3.3 It is expected that M, R and the other variables being examined will be predictive of CI over and above the contribution of CDMSE and CM. This is anticipated to explicate how correlates of CI contribute to the variance in this construct.

## Method

### *Design*

This study was correlational in design. The pre-test baseline data collected at the first testing time (T1) was chosen for this study as it was representative of the population of interest prior to the research intervention. There were five key dependent variables (DVs). They were the attitude subscale from the Career Maturity Inventory-Revised (CMI-R; Crites & Savickas, 1995), the indecision scale from the Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1976), the total score of the Career Decision-Making Self-Efficacy-Short Form scale (CDMSE-SF; Betz, Klein, & Taylor, 1996), and the maladaptive and resolute subscales obtained from factor analysis of the Flinders Adolescent Decision-Making Questionnaire (FADMQ; Mann, 1988).

Two additional continuous variables were utilised. These acted as validity checks for CI (Osipow & Winer, 1996). They were the certainty subscale of the CDS and students' self-reported certainty of their future plans (CFP) for the year after Year 10. The demographic and contextual variables of interest were gender, participants' work experience, achievement levels, performance goals along with parents' education and employment status.

### *Participants*

All 12 class groups of the year 10 students ( $N = 296$ ) attending a government high school in Brisbane, the capital city of Queensland, Australia took part in this study. The vast majority of students were Caucasian with approximately 7% of the sample consisting of students of Asian, Eastern European or South Pacific Islander ethnic backgrounds. The school is located in a predominantly metropolitan suburb but some farmland and undeveloped land is also present in the area. Statistical information concerning the district's socio-economic status, employment and crime rates are provided in the previous chapter. Students in this district have not historically made smooth transitions from school to work. Thus, this school was chosen as a Queensland pilot in a federally funded government initiative to review the Junior curriculum (Years 8, 9 & 10) in relation to Vocational Education and Training (VET).

Students' participation in this study was considered an integral part of the ongoing career education curriculum development of their school. Nevertheless, participation was voluntary and parents' permission was sought. Demographic information for the total sample is presented in Table 5.1.

Table 5.1

*Demographic Variables for Total Sample used for the Cross-Sectional Study*

|                                       |                                      | <i>N</i>  |
|---------------------------------------|--------------------------------------|-----------|
| Age                                   | <i>M</i> = 14.50<br><i>SD</i> = 0.53 |           |
| Gender                                | Female                               | 147 (50%) |
|                                       | Male                                 | 149 (50%) |
| Part-Time Work Experience             | Yes                                  | 126 (43%) |
|                                       | No                                   | 167 (57%) |
| School Achievement Level <sup>1</sup> | SA                                   | 186       |
|                                       | HA                                   | 109       |
| Mother's Education <sup>2</sup>       | PS/10                                | 126       |
|                                       | 12                                   | 82        |
|                                       | TAFE/UNI                             | 63        |
| Father's Education <sup>2</sup>       | PS/10                                | 131       |
|                                       | 12                                   | 75        |
|                                       | TAFE/UNI                             | 49        |
| Employment Status <sup>3</sup>        | 0                                    | 167       |
|                                       | 1                                    | 85        |
|                                       | 2                                    | 25        |
|                                       | 3                                    | 20        |
| Performance Goals                     | Specified                            | 240       |
|                                       | Not Specified                        | 57        |

*Note*<sup>1</sup>: SA = satisfactory or less achievement, HA = high achievement and above.

*Note*<sup>2</sup>: PS/10 stands for a primary school or Year 10 level of education, 12 = Year 12, TAFE/UNI = TAFE or similar tertiary course or a university level of education.

*Note*<sup>3</sup>: 0 = no one in the family unemployed, 1 = mother unemployed, 2 = father unemployed, 3 = both parents unemployed.

*Procedure*

Chief stakeholders at the school, namely the principal and the industry liaison officer, along with university supervisors met and appointed the present researcher to design and conduct the project. Prior to the project's inception, the school community, including teachers, parents and students were informed about the career education research that was to be conducted at their school. The research investigator made a presentation at a general staff meeting, invited discussion about the project and answered teachers' questions. Likewise, the parent body was informed via a Parents' and Friends' meeting as well as through the school newsletter. Parents of Year 10 students were asked to give permission for their child to take part in the career intervention and the study.

The year 10 students attended an assembly conducted by the school principal before the administration of the surveys at T1 to give them specific information about the project. The students were informed about the goals of the research (e.g., to guide career education curriculum development) and were given an outline of the entire project (e.g., four tests in all). They were also notified that their participation would be on a voluntary basis and that it would not constitute part of their assessment for any school subjects.

The T1 data were gathered via the administration of a survey given to all year 10 students in 12 class groups during the same 70-minute lesson period. The students were supervised by their regular class teachers. The chief investigator met with these teachers before school on the morning of the test to inform them of the conditions under which the students were to complete the surveys. Teachers were asked to observe students closely to make sure they were carefully reading the survey questions and deliberating over answers independently. The chief investigator explained how patterns in responses and missing data could corrupt findings and make inferences less reliable. Subsequently, the teachers were asked to check that each survey was completed in full before allowing students' names to be placed in a class draw for a fast food voucher at the end of the lesson. Additionally, teachers were instructed to check attendance and provide a list of absentees when handing in the surveys to the researcher. Absent students were given the opportunity to complete the survey on another day. The researcher supervised this follow-up session.

During the briefing, teachers were also provided with a script (Appendix E) that they were asked to read to the students before they completed the surveys. This script gave explicit information about how to fill in the survey and invited students to seek assistance from the researcher, who moved from room to room during the survey, if they had any concerns or questions. The students were also informed via the script that their contribution would remain confidential and that they could withdraw at any time if they wished. The researcher conducted a follow up testing session with the absentees as a group two days later.

### *Instruments*

The survey consisted of three well-established career development measurement tools, a measure of adolescent decision coping patterns and eight questions of a demographic nature.

#### *Career Maturity Inventory – Revised*

The revised version of the CMI (CMI-R; Crites & Savickas, 1995) was used to indicate levels of career maturity with regard to attitudes toward, and competence in career decision-making. Each of the scales and subscales of the original CMI (Crites, 1978a) was represented by five items on the CMI-R, which consisted of 25 items for each of the two scales (Attitude, Competence). The response format of true-false for the Attitude scale and multiple choice for the CMI Competence test was changed to agree (A) and disagree (D) for the two CMI-R tests. Participants were required to respond by indicating whether they agreed or disagreed with the statements. Scores were obtained by summing the number of mature responses, with higher scores indicating more career maturity.

Crites (1995) argued that “since the items in the 1995 CMI were selected from the 1978 CMI, they have the same reliability as the items in the previous edition” (p. 49). Internal consistency for the CMI, ranging from .72 to .90 (Attitude) and .58 to .90 (Competence) has been established (Crites, 1978a; 1978b), and numerous studies support this scale’s validity (Levinson et al., 1998). Notwithstanding this, however, ongoing research using the CMI-R is required to ascertain whether the reliability and validity evidence for the CMI is indeed applicable to the CMI-R. Furthermore, studies utilising the CMI-R in a variety of cultural settings are required to determine the cross-cultural equivalence of the scale.

The current study revealed initial internal reliability coefficients of  $\alpha = .51$  for the Attitude scale and  $\alpha = .33$  for the Competence scale. These low reliabilities led to two strategies. First, exploratory factor analyses were conducted to identify the factor structure of the CMI-R when used with Australian students. Simple structure was not able to be attained, even by progressively deleting items. The second strategy was to use a reliability analysis to increase the  $\alpha$  level by progressively

deleting items that contributed to low internal reliability. This second strategy led to the modification of the scale whereby 10 items were deleted from the Attitude scale to achieve an admissible Alpha coefficient of .71. The Competence scale's level of reliability could not be improved, however, despite the elimination of many items during reliability analysis. Since anecdotal reports (see Chapter 7) suggested that students found this particular part of the test battery difficult and onerous to read, Flesch (1948) readability statistics on the Attitude and Competence scales were compared. Flesch Reading Ease scores rate text on a 100-point scale. The higher the score, the easier it is to understand the document. Scores of 78.9 for the entire 25 Attitude items and 56.9 for the 25 Competence items were obtained, indicating that the Competence scale was considerably more difficult to read than the Attitude scale. The Flesch-Kincaid Grade Level scores, which rate the text on an American grade-school level, calculated the Attitude scale to have a 5.4 rating while the Competence scale had a 9.1 rating. This means the Competence scale requires the reader to have a much higher reading proficiency level than that needed to read the Attitude scale. The 9.1 rating also exceeds the "readability yardstick" score of 7.0 to 8.0 recommended by Flesch for standard text. Therefore, due to its low reliability and poor content validity in terms of appropriate readability level for this sample of students, the Competence scale score was not used in the analyses for this thesis. Further studies need to examine this scale's suitability for use with young adolescents, despite the manual indicating that it can be used with this age group.

#### *Career Decision-Making Self-Efficacy Scale-Short Form*

Participants' beliefs about their capacity to deal with a variety of career decision-making tasks were measured using the condensed version of the Career Decision-Making Self-Efficacy Scale (CDMSE-SF; Betz et al., 1996). Taylor and Betz (1983) developed the original 50-item version of this scale by cataloguing 10 skills corresponding with each of the five career choice competencies postulated by Crites (1978b) in his model of career maturity. Hence, item content reflected career decision-making tasks in relation to (i) accurate self-appraisal, (ii) gathering occupational information, (iii) goal selection, (iv) making plans for the future, and (v) problem solving (Betz & Luzzo, 1996). The 25-item CDMSE-SF scale was

developed by selecting five items from each of these five categories that best satisfied specific criteria. For example, comprehensiveness, as opposed to narrowness of the item was considered, as well as factor loadings (Taylor & Popma, 1990) and split-scale analysis of the subscales (Gati, Osipow, & Fassa, 1994).

Despite the sound conceptual foundation of the CDMSE and CDMSE-SF scales, factor analyses have not supported the presence of the five subscale scores (Robbins, 1985; Taylor & Popma, 1990). Therefore, the CDMSE-SF was treated as a uni-dimensional measure of self-efficacy for making career-related decisions in the current study. It was assessed by having respondents judge their confidence in their ability to accomplish each career decision-making task along a 5-point continuum from, no confidence at all (1), to complete confidence (5). Total scores therefore range from 25 to 125. Higher scores indicate more confidence.

Internal consistency of the CDMSE reported for the first normative sample of 346 university students was .97 (Taylor & Betz, 1983). The short form has yielded an alpha of .94 (Betz et al., 1996), again with college students. Luzzo (1996a) has since reviewed a variety of studies that have established adequate reliability. The current study attained an internal reliability coefficient of  $\alpha = .94$ . Validity evidence for the CDMSE-SF is also impressive (Betz et al.). In particular, relationships ranging from -.19 to -.66 with career indecision, as measured by the CDS, have consistently supported criterion-related and construct validity.

### *Career Decision Scale*

The CDS (Osipow et al., 1976) comprises 19 items, the first two of which make up the Certainty scale and the remaining 16 items form the Indecision scale. There is an open-ended item that was not used in the current research. Responses to these statements are made on a 4-point Likert scale (1 = not like me, to 4 = like me), according to how pertinent they are perceived. Scores on the Certainty scale thus range from 2 to 8 and Indecision scores range from 16 to 64. High scores indicate high certainty and more indecision respectively.

The CDS has been widely used in research for over two decades as a means of clarifying the antecedents of indecision and as a measure of change in levels of career indecision before and after counselling intervention. Test-retest reliability

coefficients of between .70 and .90 have been reported (Levinson et al., 1998; Guerra & Braungart-Rieker, 1999) and extensive validity evidence also supports the CDS (Osipow, 1987, 1999). The current study attained an internal reliability coefficient of  $\alpha = .71$  for the Certainty scale and  $\alpha = .88$  for the Indecision scale.

### *Flinders Adolescent Decision-Making Questionnaire*

Participants' perception of how they normally perform decision-making behaviours was measured by summing the relevant items identified via an exploratory factor analysis and subsequent confirmatory factor analysis (see Chapter 3) of the FADMQ (Mann, 1988). The two factors obtained from this process were labelled Maladaptation and Resoluteness and were reflective of behaviours that either hinder or enhance decision-making. The Maladaptation scale contained items such as "I'd rather let someone else make a decision for me so that it won't be my problem" (from the original FADMQ Complacency scale), "I prefer to leave decisions to others" (from the original FADMQ Cop Out scale), and "Whenever I get upset by having to make a decision, I choose on the spur of the moment" (from the original FADMQ Panic scale). The sample items for the Resoluteness scale included "I feel confident about my ability to make decisions" and "I take a lot of care before I make a choice" (from the original FADMQ Self-Esteem and Vigilance scales respectively).

In all, there were five items that loaded on the Maladaptation factor and seven that loaded on the Resoluteness factor. The response format required participants to indicate the level that best described their way of doing things with four gradients from "not at all true for me" (0) to "almost always true" (3). Scores on the first factor thus ranged from 0 to 15, with higher scores indicating more maladaptation in decision coping behaviour. Resoluteness had scores ranging from 0 to 21, with higher scores on this factor deemed to reflect more competent decision coping behaviour.

Reliability and validity evidence for the FADMQ have been reported in the literature. In one study, Mann, Harmoni, Power, Beswick and Ormond (1988) reported that sample items from each of the five scales attained Cronbach alpha values of .76 for Decision Self-Esteem, .70 for Vigilance and Panic, .80 for Cop Out, and .67 for the Complacency scale item. Harmoni (1990) reported similar alpha figures for the scales: Vigilance .73, Panic .70, Cop Out .66 and Complacency .73.

Using data from Australian and Israeli adolescent samples, Friedman and Mann (1993) noted high intercorrelations amongst the Panic, Cop Out and Complacency scales. These authors went on to perform Small Space Analysis finding that items from four of the scales (Self-Esteem excluded) formed two distinct clusters, which they labelled “adaptive”, derived from Vigilance items, versus “maladaptive”, comprising Panic, Cop Out and Complacency items. This study also found support for the prediction that “the fundamental structure of decision-coping patterns would be essentially similar for Israeli and Australian adolescents” (p. 198). The present T1 data sets revealed internal reliability coefficients of  $\alpha = .74$  for Maladaptation and  $\alpha = .78$  for Resoluteness.

#### *Certainty of Future Plans*

The students were asked, “How sure are you at the moment about the subjects or course of action you’ll choose for next year?” The five response categories ranged from “completely confused”, “quite confused”, to “fairly sure”, “quite sure” and “completely sure”. This was treated as a five-point scale and, as such, scores were tallied to obtain a measure of certainty in students’ plans following the completion of Year 10. Scores ranged from one to five with higher scores indicating more certainty about plans. A correlation coefficient of .47 was attained for certainty of future plans (CFP) and the certainty subscale of the CDS thus providing some validity support for this single item scale.

#### *Gender*

A straightforward item requiring respondents to place a mark in one of two boxes labelled Female and Male was used to determine participants’ gender.

#### *Work Experience*

Two items were amalgamated to ascertain participants’ work experience. If they had undertaken part-time work in the past and/or were currently employed in a

part-time job, they were given a code of 1. If participants indicated that they were not employed now, or in the past, they were coded as 0, denoting no work experience.

### *School Achievement Level*

Participants' response to the item, "At school, what is your most common level of achievement across all subjects?" was coded under five categories corresponding with the standard assessment rankings used by the school. These were: VLA (very limited achievement), LA (limited achievement), SA (sound achievement), HA (high achievement) and VHA (very high achievement). Since no one reported a VLA standard, this category was dropped. Responses to the remaining two extremes were minimal. Five per cent of the sample reported a LA level and only 1.5% estimated themselves as achieving a VHA standard. The four categories were subsequently collapsed into two groups: those with a satisfactory or less level of achievement (SA) and those with a high achieving (HA) or above level.

### *Parents' Education*

The highest qualification that students' mother, father and/or guardian had achieved was elicited to determine parents' level of education. Respondents were asked to indicate the level of education that their mother, father and/or guardian had reached. Response categories were a primary school or Year 10 level of education (1), Year 12 (2), TAFE/Technical college or a university level of education (3). As only 19 participants indicated their guardian's level of education, this demographic resulted in two variables, namely, mother's education and father's education.

### *Parents' Employment Status*

One item was used to determine if parents were employed or unemployed. Participants were asked, "If there is anyone in your household who is unemployed at the moment, please tick the appropriate box or boxes below." Participants received a 0 coding if they indicated that no member of their family was unemployed. If their

mother was unemployed they received a 1, for an unemployed father a 2, and if they indicated both their mother and father were unemployed a 3 coding applied.

### *Performance Goals*

Students were asked to write “what you think you’ll be doing next year” so that performance goals could be ascertained. They were given the following prompt to explain how to respond: “(e.g., taking vocational subjects, academic subjects or leaving school?)”. This string variable was converted to a categorical variable by allocating a 1 to those who specified what they planned to do. If students wrote statements such as “not sure” or “no idea” they were given 0 to denote goals were not specified.

## Results

Table 5.2 presents a summary of descriptive statistics for the seven continuous variables used in this study. Summary data for the seven categorical variables are presented in Table 5.1. Prior to the analyses, the 14 variables under scrutiny were thoroughly screened to ensure the assumptions of all analyses to follow were met. Extreme scores were removed to achieve normality of distributions. This initial investigation also revealed that a linear relationship between the variables was apparent.

Table 5.2

### *Summary Statistics for the Seven Dependent Variables*

| Variable                     | <i>M</i> | <i>SD</i> | <i>N</i> |
|------------------------------|----------|-----------|----------|
| CMI-R Attitude (CM)          | 10.70    | 3.49      | 298      |
| CDMSE                        | 88.72    | 16.27     | 298      |
| CDS Career Indecision (CI)   | 32.55    | 9.56      | 298      |
| CDS Career Certainty (CC)    | 4.84     | 1.65      | 297      |
| FADMQ Maladaptation (M)      | 3.95     | 2.88      | 297      |
| FADMQ Resoluteness (R)       | 12.14    | 2.71      | 297      |
| Certainty Future Plans (CFP) | 3.04     | 1.11      | 294      |

Results are presented in three sections corresponding to the hypotheses tested. Correlations are reported in the opening section to address the first group of hypotheses concerning the relationships amongst the seven continuous variables. Second, differences on these variables in regard to the seven categorical variables are reported. In the third section, three hierarchical multiple regression analyses are reported with CM, CDMSE and CI as the respective DVs.

### *Intercorrelations amongst the Continuous Variables*

Examination of Table 5.3 shows significant interrelationships amongst all continuous variables. The Pearson Product-Moment correlation coefficients of .3 or less will not be reported, since they do not account for over 10% of the variance and thus do not display meaningful associations (Tabachnick & Fidell, 1996).

Table 5.3

*Pearson Product-Moment Correlations, 2-tail Significance, using Time 1 Data*

| Variable                        | Variable |        |         |         |         |         |         |
|---------------------------------|----------|--------|---------|---------|---------|---------|---------|
|                                 | 1        | 2      | 3       | 4       | 5       | 6       | 7       |
| 1. CMI-R Attitude (CM)          | --       | .35*** | -.50*** | .44***  | -.32*** | .37***  | .37***  |
| 2. CDMSE                        |          | --     | -.34*** | .47***  | -.40*** | .58***  | .50***  |
| 3. CDS Career Indecision (CI)   |          |        | --      | -.33*** | .27***  | -.22*** | -.29*** |
| 4. CDS Career Certainty (CC)    |          |        |         | --      | -.18**  | .38***  | .47***  |
| 5. FADMQ Maladaption (M)        |          |        |         |         | --      | -.30*** | -.18**  |
| 6. FADMQ Resoluteness (R)       |          |        |         |         |         | --      | .40***  |
| 7. Certainty Future Plans (CFP) |          |        |         |         |         |         | --      |

Note: \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

High CM attitude scores were found to be associated with high levels of CDMSE, as well as more Career Certainty (CC), R and certainty of future plans (CFP). Conversely, CM was modestly correlated with lower levels of M. A moderate negative relationship between CM and CI was also revealed. These results indicate that the more mature students' attitude toward career decision-making, the more confident they are about their decision-making ability. This supports Hypothesis 1.1. In addition, more mature attitudes amongst the present sample of adolescents are associated with more certainty and resoluteness. Correspondingly, the more mature

their attitudes, the less indecision and less maladaptive decision coping strategies students reported. These findings support Hypotheses 1.2 and 1.3.

Positive relationships of moderate strength were found between CDMSE and CC, R and CFP. Higher scores on CDMSE were also associated with lower levels of CI and less M. Therefore, like CM, the expected links between CDMSE and the other continuous variables were substantiated by these results. Higher confidence levels were associated with more certainty and resoluteness toward decision-making and less indecision and maladaptive decision coping patterns. These findings are supportive of Hypotheses 1.4 and 1.5.

There were four other pairs of variables that were found to have moderate associations with each other. In terms of the validity check for the CDS scale, CI was negatively related to CC as expected. In addition, higher levels of CC were found to be associated with more resolute decision coping behaviour (R) and more certainty about plans for the year after Year 10 (CFP). Likewise, more R was also related to more CFP. The hypothesised links between CI and M and R were apparent in terms of expected directions, however, these associations were weak and thus Hypothesis 1.6 was not supported.

#### *The Effect of the Demographic/Contextual Variables*

A series of *t* tests were conducted to investigate differences on the DVs according to each of the seven demographic/contextual variables. Table 5.4 presents summary data for the first of these concerning gender.

Table 5.4

#### *Summary Statistics for the Seven Dependent Variables and Gender*

| Variable                     | Females<br><i>n</i> = 147 |           | Males<br><i>n</i> = 149 |           | <i>t</i> |
|------------------------------|---------------------------|-----------|-------------------------|-----------|----------|
|                              | <i>M</i>                  | <i>SD</i> | <i>M</i>                | <i>SD</i> |          |
| CMI-R Attitude (CM)          | 10.51                     | 3.46      | 10.91                   | 3.54      | -.99     |
| CDMSE                        | 88.10                     | 16.01     | 89.61                   | 15.86     | -.82     |
| CDS Career Indecision (CI)   | 32.86                     | 8.91      | 32.12                   | 10.07     | .67      |
| CDS Career Certainty (CC)    | 4.52                      | 1.61      | 5.14                    | 1.60      | -3.32**  |
| FADMQ Maladaptation (M)      | 3.71                      | 3.00      | 4.17                    | 2.74      | -1.38    |
| FADMQ Resoluteness (R)       | 11.54                     | 3.81      | 12.71                   | 3.59      | -2.71**  |
| Certainty Future Plans (CFP) | 2.78                      | 1.09      | 3.30                    | 1.07      | -4.16*** |

Note: \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

The two measures of certainty were found to show significant differences according to the gender of participants. Boys reported more certainty than girls in both instances with the certainty subscale of the CDS resulting in  $t(293) = -3.32, p = .001$  and CFP exhibiting  $t(292) = -4.16, p < .001$ . No other gender differences were found apart from boys reporting more Resoluteness in their decision coping behaviour than girls:  $t(294) = -2.71, p = .007$ . Hypothesis 2.1, which specified that females were expected to have higher CM scores than males, was not supported.

Whether students had part-time work experience or not was also found to affect two of the DVs, but this time differences were observed on CM attitudes scores and CDMSE. Summary data are displayed in Table 5.5.

Table 5.5

*Summary Statistics for the Seven Dependent Variables and Work Experience*

| Variable                     | Work Experience |           | No Work Experience |           | <i>t</i> |
|------------------------------|-----------------|-----------|--------------------|-----------|----------|
|                              | <i>n</i> = 126  |           | <i>n</i> = 167     |           |          |
|                              | <i>M</i>        | <i>SD</i> | <i>M</i>           | <i>SD</i> |          |
| CMI-R Attitude (CM)          | 11.29           | 3.20      | 10.34              | 3.67      | -2.32*   |
| CDMSE                        | 91.56           | 15.77     | 86.75              | 15.81     | -2.58*   |
| CDS Career Indecision (CI)   | 32.81           | 9.83      | 32.23              | 9.31      | -.51     |
| CDS Career Certainty (CC)    | 5.01            | 1.57      | 4.69               | 1.68      | -1.64    |
| FADMQ Maladaptation (M)      | 3.76            | 2.92      | 4.05               | 2.85      | .84      |
| FADMQ Resoluteness (R)       | 12.58           | 3.63      | 11.84              | 3.79      | -1.67    |
| Certainty Future Plans (CFP) | 3.18            | 1.10      | 2.93               | 1.11      | -1.85    |

Note: \* =  $p < .05$  (Consistent with APA style, exact  $p$  values are reported in the text).

Thus, the proposed association between work experience and CM ( $H_{2.2}$ ) was confirmed:  $t(291) = -2.32, p = .02$ . Inspection of the means shows that those with work experience have more mature attitudes toward career decision-making than those without. CDMSE was also significant:  $t(291) = -2.58, p = .01$ . Those with work experience reported more confidence in their ability to make career decisions than students who had not been employed.

Students' estimate of their most common level of achievement across all subjects at school was also examined in relation to the seven DVs. Table 5.6 presents the relevant descriptive statistics. CM was significantly related to achievement levels. Those who reported maintaining a high standard of achievement displayed higher scores on the career maturity attitude scale than those reporting a satisfactory or low level of achievement:  $t(293) = -3.01, p = .003$ . In support of Hypothesis 2.3, school achievement was found to relate positively to CDMSE as expected because those with a high standard of achievement had higher scores on CDMSE than those reporting a low or satisfactory level of achievement:  $t(293) = -2.25, p = .025$ . Achievement levels were not found to differ significantly on any of the other DVs, however.

Table 5.6

*Summary Statistics for the Seven Dependent Variables and Achievement Level*

| Variable                     | High Achievement<br>or better<br><i>n</i> = 109 |           | Satisfactory or Less<br>Achievement<br><i>n</i> = 186 |           | <i>t</i> |
|------------------------------|---|-----------|---|-----------|----------|
|                              | <i>M</i>  | <i>SD</i> | <i>M</i>  | <i>SD</i> |          |
|                              | CMI-R Attitude (CM)                             | 11.51     | 3.44  | 10.26     |          |
| CDMSE                        | 91.51   | 14.96     | 87.23   | 16.31     | -2.25*   |
| CDS Career Indecision (CI)   | 31.14   | 9.48      | 33.23   | 9.45      | 1.83     |
| CDS Career Certainty (CC)    | 5.01  | 1.67      | 4.72  | 1.61      | -1.45    |
| FADMQ Maladaptation (M)      | 3.70  | 3.05      | 4.08  | 2.78      | 1.10     |
| FADMQ Resoluteness (R)       | 12.61   | 3.73      | 11.84   | 3.73      | -1.70    |
| Certainty Future Plans (CFP) | 3.17  | 1.07      | 2.96  | 1.13      | -1.63    |

Note: \* =  $p < .05$ ; \*\* =  $p < .01$

Whether students had specified their goals for the year following Year 10 or not (PG) was examined next. Summary data are presented in Table 5.7. Five of the career development measures differed significantly according to PG. The CM attitude scores of those who had specified their performance goals were higher than those who had not set goals for themselves:  $t(294) = 4.15, p < .001$ . Those who specified performance goals also displayed higher levels of CDMSE:  $t(294) = 3.27, p = .001$ , which is supportive of Hypothesis 2.4. If students had specified performance goals they also reported more certainty about their future plans:  $t(291)$

= 4.21,  $p < .001$ . Correspondingly, the students who had set performance goals experienced less CI:  $t(294) = -3.18$ ,  $p = .002$  and reported less maladaptive decision coping tendencies:  $t(294) = -2.83$ ,  $p = .005$ .

Table 5.7

*Summary Statistics for the Seven Dependent Variables and Performance Goals*

| Variable                     | Specified<br>$n = 240$ |       | Not Specified<br>$n = 56$ |       | $t$     |
|------------------------------|------------------------|-------|---------------------------|-------|---------|
|                              | $M$                    | $SD$  | $M$                       | $SD$  |         |
| CMI-R Attitude (CM)          | 11.10                  | 3.44  | 9.00                      | 3.29  | 4.15*** |
| CDMSE                        | 90.42                  | 15.21 | 82.82                     | 17.50 | 3.27**  |
| CDS Career Indecision (CI)   | 31.69                  | 9.28  | 36.14                     | 10.08 | 3.18**  |
| CDS Career Certainty (CC)    | 4.92                   | 1.62  | 4.52                      | 1.71  | 1.65    |
| FADMQ Maladaptation (M)      | 3.72                   | 2.74  | 4.91                      | 3.27  | -2.83** |
| FADMQ Resoluteness (R)       | 12.18                  | 3.70  | 11.96                     | 3.94  | .39     |
| Certainty Future Plans (CFP) | 3.16                   | 1.07  | 2.47                      | 1.14  | 4.21*** |

Note: \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

Two one-way ANOVAs were conducted to examine differences on the career development measures in conjunction with the level of education attained first by students' mothers and then fathers. Summary information for these comparisons is displayed in Tables 5.8a and 5.8b. The only difference amongst the measures of career development and the education level of mothers was that of CDMSE:  $F(2, 268) = 6.31$ ,  $p = .002$ . As expected ( $H_{2.5}$ ), students whose mothers had reached a primary or Year 10 level of education were significantly less confident about their career decision-making ability than those who had reached a Year 12 level, according to Tukey's HSD post hoc analysis ( $p = .004$ ). In addition, this analysis revealed that these students, that is, those with mothers educated to a PS/10 level, were also significantly less confident than their peers whose mothers had gained a TAFE or University education ( $p = .027$ ). The education that the students' fathers had reached was not found to be associated with students' scores on any of the seven career development variables.

Table 5.8a

*Summary Statistics for the Seven Dependent Variables and Mothers' Education Level*

| Variable                     | PS/10<br><i>n</i> = 126 |           | Year 12<br><i>n</i> = 82 |           | Uni/TAFE<br><i>n</i> = 63 |           | <i>F</i> |
|------------------------------|-------------------------|-----------|--------------------------|-----------|---------------------------|-----------|----------|
|                              | <i>M</i>                | <i>SD</i> | <i>M</i>                 | <i>SD</i> | <i>M</i>                  | <i>SD</i> |          |
| CMI-R Attitude (CM)          | 10.69                   | 3.49      | 10.46                    | 3.44      | 11.32                     | 3.65      | 1.11     |
| CDMSE                        | 85.78                   | 15.61     | 92.80                    | 15.45     | 91.89                     | 14.90     | 6.31**   |
| CDS Career Indecision (CI)   | 32.47                   | 9.47      | 31.89                    | 9.18      | 31.76                     | 9.18      | .16      |
| CDS Career Certainty (CC)    | 4.62                    | 1.61      | 4.96                     | 1.72      | 5.10                      | 1.68      | 2.11     |
| FADMQ Maladaptation (M)      | 4.29                    | 3.02      | 3.73                     | 2.76      | 3.79                      | 2.94      | 1.14     |
| FADMQ Resoluteness (R)       | 11.81                   | 3.66      | 12.82                    | 3.84      | 12.44                     | 3.79      | 1.90     |
| Certainty Future Plans (CFP) | 2.81                    | 1.11      | 3.30                     | 1.04      | 3.24                      | 1.10      | 6.09**   |

Note: \*\* =  $p < .01$

Table 5.8b

*Summary Statistics for the Seven Dependent Variables and Fathers' Education Level*

| Variable                     | PS/10<br><i>n</i> = 131 |           | Year 12<br><i>n</i> = 75 |           | Uni/TAFE<br><i>n</i> = 49 |           | <i>F</i> |
|------------------------------|-------------------------|-----------|--------------------------|-----------|---------------------------|-----------|----------|
|                              | <i>M</i>                | <i>SD</i> | <i>M</i>                 | <i>SD</i> | <i>M</i>                  | <i>SD</i> |          |
| CMI-R Attitude (CM)          | 10.63                   | 3.51      | 10.39                    | 3.28      | 11.37                     | 3.52      | 1.26     |
| CDMSE                        | 87.92                   | 15.93     | 90.64                    | 16.22     | 90.94                     | 14.73     | 1.04     |
| CDS Career Indecision (CI)   | 32.36                   | 9.22      | 32.64                    | 9.10      | 31.86                     | 10.44     | .10      |
| CDS Career Certainty (CC)    | 4.85                    | 1.71      | 4.65                     | 1.66      | 5.12                      | 1.68      | 1.16     |
| FADMQ Maladaptation (M)      | 4.41                    | 3.20      | 3.52                     | 2.24      | 3.98                      | 2.95      | 2.28     |
| FADMQ Resoluteness (R)       | 11.99                   | 3.72      | 12.33                    | 3.80      | 12.61                     | 3.88      | .54      |
| Certainty Future Plans (CFP) | 3.04                    | 1.13      | 3.09                     | 1.08      | 3.10                      | 1.01      | .09      |

Parents' employment status was also examined to see if it was associated with students' scores on the seven DVs. Summary statistics are presented in Table 5.9. In support of Hypothesis 2.6, no relationship between CM and parents' employment status was found. Career indecision was the only DV to differ according to whether parents were employed or not:  $F(3, 293) = 3.29, p = .021$ . Inspection of the means substantiates post hoc analysis, which showed the difference lay between students with no unemployment in their family compared with those whose parents were both unemployed ( $p = .012$ ). If both parents were unemployed, students had higher levels of CI than students whose parents were both employed. Career indecision was not affected by having one parent unemployed.

Table 5.9

*Summary Statistics for the Seven Dependent Variables and Parents' Employment Status*

| Variable                     | No Parent Unemployed<br><i>n</i> = 167 |           | Mother Unemployed<br><i>n</i> = 85 |           | Father Unemployed<br><i>n</i> = 25 |           | Both Parents Unemployed<br><i>n</i> = 20 |           | <i>F</i> |
|------------------------------|--|-----------|------------------------------------|-----------|------------------------------------|-----------|--|-----------|----------|
|                              | <i>M</i>                               | <i>SD</i> | <i>M</i>                           | <i>SD</i> | <i>M</i>                           | <i>SD</i> | <i>M</i>                                 | <i>SD</i> |          |
| CMI-R Attitude (CM)          | 10.88                                  | 3.49      | 10.46                              | 3.71      | 10.52                              | 3.55      | 10.55                                    | 2.50      | .32      |
| CDMSE                        | 87.64                                  | 16.09     | 90.55                              | 15.86     | 92.64                              | 15.81     | 84.15                                    | 19.02     | 1.63     |
| CDS Career Indecision (CI)   | 31.63                                  | 9.06      | 33.02                              | 9.72      | 31.52                              | 10.25     | 38.40                                    | 9.50      | 3.29*    |
| CDS Career Certainty (CC)    | 4.75                                   | 1.60      | 4.93                               | 1.68      | 5.16                               | 1.75      | 4.55                                     | 1.70      | .75      |
| FADMQ Maladaptation (M)      | 4.10                                   | 3.09      | 3.86                               | 2.57      | 3.20                               | 2.53      | 3.90                                     | 2.71      | .74      |
| FADMQ Resoluteness (R)       | 11.91                                  | 3.95      | 12.38                              | 3.40      | 12.48                              | 4.16      | 12.50                                    | 2.80      | .45      |
| Certainty Future Plans (CFP) | 2.94                                   | 1.12      | 3.15                               | 1.03      | 3.36                               | 1.08      | 2.95                                     | 1.35      | 1.49     |

Note: \* =  $p < .05$

Finally, chi square analyses were conducted on the seven demographic/contextual variables to inspect differences between groups of participants amongst these variables. The expected proportions of participants were found in most instances. However, students in the satisfactory or less achievement group were less likely to have set performance goals than high achievers:  $\chi^2 (1) = 11.81, p = .001$  and more likely to have mothers without a TAFE or university level of education:  $\chi^2 (2) = 10.05, p = .007$ .

*Prediction of Career Maturity, Career Decision-Making Self-Efficacy and Career Indecision*

Three hierarchical multiple regression analyses were conducted to investigate the role of R, M and specific combinations of the demographic/contextual variables in the explanation of the three key career development variables. Initial investigation revealed that all variables were normally distributed and that a linear relationship was apparent between them. Inspection of residual plots and collinearity statistics showed no violations to the assumptions of multiple regression.

In the first analysis CM was nominated as the DV and CDMSE and CI as the independent variables (IVs) entered at the first step. The measures of decision coping

behaviour were chosen to be inserted in the second step along with the variables that demonstrated associations with CM in previous analyses. Hence, the two dimensions of certainty, namely career certainty, as measured by the CDS, and students' certainty about their plans for the following year (i.e., CFP), were entered along with M and R at Step 2 to determine the contribution of these variables over and above that of CDMSE and CI. Part-time work experience (base level = no work experience), school achievement level (base level = satisfactory achievement) and whether students had set goals for themselves or not (i.e., PG; base level = goals not specified), were converted into dummy variables so that they could also be entered at the second step of this analysis. Summary data for this analysis are reported in Table 5.10.

Table 5.10

*Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Maturity (N = 289)*

| Variable                     | B     | SE B | $\beta$  |
|------------------------------|-------|------|----------|
| Step 1                       |       |      |          |
| CDMSE                        | 0.04  | 0.02 | 0.20***  |
| CDS Career Indecision (CI)   | -0.16 | 0.02 | -0.43*** |
| Step 2                       |       |      |          |
| FADMQ Maladaptation (M)      | -0.17 | 0.06 | -0.14**  |
| FADMQ Resoluteness (R)       | 0.14  | 0.05 | 0.15**   |
| CDS Career Certainty (CC)    | 0.48  | 0.12 | 0.23***  |
| Certainty Future Plans (CFP) | 0.30  | 0.18 | 0.95     |
| Work Experience              | 0.71  | 0.33 | 0.10*    |
| Achievement                  | 0.57  | 0.34 | 0.08     |
| Performance Goals (PG)       | 0.98  | 0.44 | 0.11*    |

Note: \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

Note:  $R^2 = .29$  for Step 1;  $R^2$  Change = .13 for Step 2

As expected, the key career development variables entered at Step 1 (i.e., Model 1: CDMSE & CI), were significant predictors of CM with  $R^2 = .29$  and  $F(2, 286) = 59.23$ ,  $p < .001$ . The addition of the variables chosen to be entered at Step 2 (i.e., Model 2) contributed a further 13.3% of unique variance to the relationship with the  $R^2$  change producing a significant effect:  $F(7, 279) = 9.27$ ,  $p < .001$ . Of the IVs in Model 2, the most important individual predictors of CM were CI which contributed 9%, and students' level of career certainty (CC) as measured by the CDS

( $\beta = .23$ ), which accounted for 3.5% of unique variance:  $t(289) = 4.09, p < .001$ . This was followed by the two measures of decision coping behaviours with maladaptation (M) making a significant unique contribution of 1.6%:  $t(289) = -2.75, p = .006$  ( $\beta = -.14$ ) and resoluteness (R) making a significant unique contribution of 1.4%:  $t(289) = 2.65, p = .009$  ( $\beta = .15$ ). Taken together, 42.6% of the variance in CM was accounted for by all variables entered:  $F(9, 279) = 23.03, p < .001$  with each of the IVs making significant unique contributions to the explanation of CM apart from certainty of future plans (CFP) and school achievement.

The second hierarchical regression was conducted to determine the contribution of M, R and other specific IVs toward the explanation of CDMSE over and above that of CM and CI. Hence, CM and CI were entered in Step 1. The demographic/contextual variables that were shown to differ significantly in relation to CDMSE were selected for the second step of the analysis. These variables were M, R, career certainty (CC), and certainty of future plans (CFP). The dummy variables of part-time work experience, school achievement level, performance goals, and mothers' education (base level = tertiary level not attained) were also entered at Step 2 of the equation. Table 5.11 presents summary data for this analysis.

Table 5.11

*Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Decision-Making Self-Efficacy (N = 264)*

| Variable                     | B     | SE B | $\beta$  |
|------------------------------|-------|------|----------|
| Step 1                       |       |      |          |
| CMI-R Attitude (CM)          | 1.01  | 0.30 | 0.23**   |
| CDS Career Indecision (CI)   | -0.38 | 0.11 | -0.22**  |
| Step 2                       |       |      |          |
| FADMQ Maladaptation (M)      | -1.28 | 0.26 | -0.24*** |
| FADMQ Resoluteness (R)       | 1.51  | 0.21 | 0.36***  |
| CDS Career Certainty (CC)    | 1.26  | 0.51 | 0.13*    |
| Certainty Future Plans (CFP) | 3.31  | 0.74 | 0.24***  |
| Work Experience              | 1.96  | 1.39 | 0.06     |
| Achievement                  | 0.93  | 1.44 | 0.03     |
| Performance Goals (PG)       | 3.61  | 1.94 | 0.09     |
| Mothers' Education           | 1.32  | 1.63 | 0.04     |

Note: \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

Note:  $R^2 = .15$  for Step 1;  $R^2$  Change = .38 for Step 2

At Step 1, CM and CI accounted for 15.2% of the variance in CDMSE:  $F(2, 261) = 23.37, p < .001$ . The  $R^2$  change at Step 2 showed that the second group of IVs contributed an additional 38% of unique variance to the relationship. This produced a significant effect:  $F(8, 253) = 25.71, p < .001$ . The IVs to make significant unique contributions to the explanation of CDMSE over and above that of CM and CI were M, R, CC, and CFP. Of these, the behavioural measures of decision coping style were the strongest individual predictors of CDMSE. Resoluteness ( $\beta = .36$ ) was the most important variable contributing just over 9% of unique variance to the explanation of CDMSE:  $t(264) = 7.09, p < .001$ . This was followed by M ( $\beta = -.24$ ), which contributed 4.49% of unique variance:  $t(264) = -4.92, p < .001$ . The level of certainty students expressed in terms of their plans for the year subsequent to Year 10 (i.e., CFP;  $\beta = .24$ ) was also an important unique predictor IV adding another 3.7% of individual variance to the explanation of CDMSE:  $t(264) = 4.50, p < .001$ . Taken together, 53.2% of the variance in CDMSE was accounted for by all variables entered:  $F(10, 253) = 28.79, p < .001$ .

The IVs that made significant unique contributions to the explanation of CDMSE beyond CM and CI were CC, M, R and CFP. Of these, the behavioural measures of decision coping style were the strongest individual predictors. Resoluteness ( $\beta = .36$ ) was the most important variable contributing just over 9% of unique variance to CDMSE:  $t(264) = 7.09, p < .001$ . This was followed by M ( $\beta = -.24$ ), which contributed 4.49% of unique variance:  $t(264) = -4.92, p < .001$ . The level of certainty students expressed in terms of their plans for the year subsequent to Year 10 (i.e., CFP,  $\beta = .24$ ) was also an important unique predictor IV adding another 3.7% of individual variance to the explanation of CDMSE:  $t(264) = 4.50, p < .001$ .

In the last hierarchical regression, CM and CDMSE were entered in Step 1 with CI as the DV. For the second step, M, R, CC, PG and parents' employment status were included to determine how much variance in CI could be explained by these latter variables over that explained by CM and CDMSE. The three levels of the categorical variable, parents' employment status was converted to a set of dummy variables. One parent unemployed and both parents unemployed were entered into the equation. Table 5.12 reports on summary statistics for this analysis.

Table 5.12

*Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Career Indecision (N = 294)*

| Variable                | B     | SE B | $\beta$  |
|-------------------------|-------|------|----------|
| Step 1                  |       |      |          |
| CMI-R Attitude (CM)     | -1.17 | 0.14 | -0.43*** |
| CDMSE                   | -0.13 | 0.03 | -0.21*** |
| Step 2                  |       |      |          |
| FADMQ Maladaptation (M) | 0.27  | 0.18 | 0.08     |
| FADMQ Resoluteness (R)  | 0.18  | 0.16 | 0.07     |
| CDS Certainty (CC)      | -0.66 | 0.34 | -0.11    |
| Performance Goals (PG)  | 0.04  | 1.25 | 0.00     |
| One Parent Unemployed   | 1.21  | 0.98 | 0.06     |
| Both Parents Unemployed | 5.85  | 1.89 | 0.16**   |

Note: \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

Note:  $R^2 = .30$  for Step 1;  $R^2$  Change = .04 for Step 2

At Step 1, CM and CDMSE significantly predicted CI:  $F(2, 291) = 60.76$ ,  $p < .001$ , and accounted for 29.5% of the variance in this DV. The  $R^2$  change at Step 2 showed that the second group of IVs contributed an additional 3.9% unique variance in CI and produced a significant effect:  $F(6, 285) = 2.81$ ,  $p = .011$ . The only IV to make a significant unique contribution to the explanation of CI over and above that made by CM and CDMSE, however, was the dummy variable, both parents unemployed ( $\beta = .16$ ), which individually added 2.2% to the prediction of CI:  $t(294) = 3.09$ ,  $p = .002$ . Overall, 33.4% of the variance in CI was accounted for by all variables entered:  $F(8, 285) = 17.86$ ,  $p < .001$ , with the most important predictors being CM (10.2%), parents' employment status (2.2%) and CDMSE (1.6%).

## Discussion

This cross-sectional study centred upon a concurrent examination of the three key career development constructs of career maturity (CM), career decision-making self-efficacy (CDMSE) and career indecision (CI). There were three main research questions, giving rise to three lines of inquiry. The first question asked: Will the relationships between CM, CDMSE and CI established previously in the literature hold for the present sample of adolescents and will the measures of decision-making behaviour (M and R) display anticipated links with these key variables? Investigation

of this question, which entailed six hypotheses, revealed the predicted relationships amongst CM, CDMSE and CI for the present sample of adolescents as shown previously with adults. It also extended the knowledge base concerning CM, CDMSE and CI by ascertaining how these constructs relate to measures of decision-making behaviour. The second main research question, which again entailed six hypotheses, asked: What is the influence of demographic and contextual characteristics on students' level of career development and decision-making behaviour? This cohort of high school students exhibited five out of the six expected differences. The third line of inquiry asked: What is the role of R, M and specific combinations of the variables under investigation in further explaining CM, CDMSE and CI respectively? The additional variables made significant contributions to the explanation of variance in the three key DVs in each case. A detailed discussion of the findings for each of these three lines of inquiry is presented first. Following this, implications for intervention design are discussed.

#### *Interrelationships amongst the Career Development Measures*

The positive relationship between CM attitude scores and CDMSE that has been documented previously, but essentially with first year college students, was detected by the current study amongst high school aged participants. The Pearson Product Moment correlation coefficient was similar but slightly lower than the relationship previously reported by Luzzo (1996) ( $r = .45$  versus  $r = .35$ ). This may simply reflect differences in methodological design. However, it could signify that CM and CDMSE may not be as closely aligned during the adolescent years as in young adulthood, thus providing some evidence for the developmental characteristic of the constructs. This proposition would need to be tested further in order to establish its credibility. Alternatively, the lower correlation between CM and CDMSE found in the present study may be explained by cross-cultural differences. Australian individuals may not exhibit the same association between CM and CDMSE due to a cultural influence not present in the American context. Nevertheless, these tentative suppositions will require further longitudinal and cross-cultural investigation before any clear conclusions may be drawn.

The expectation that higher scores on CM would be associated with lower levels of CI was based on previous findings concerning the CM construct (Patton & Lokan, 2001). The authors of this review noted several studies that “have reported a positive relationship between CM and career decidedness in undergraduate students” (p. 41). The current study endorsed this assertion by observing a significant negative relationship between CM and CI. It appears that adolescents with more mature attitudes toward career decision-making, like more career-mature young adults, are more decisive than their less mature colleagues.

As anticipated, CM was also found to be positively related to resolute decision coping patterns and negatively related to maladaptive ones. This lends support to Savickas’ (1997) argument for a modification of CM, which he refers to as the core career development construct central to life-span, life-space theory. Savickas believes that process variables such as “learning, decision-making, or adaptation [should be used as] bridging constructs” (p. 257) to integrate and organise this knowledge base. Furthermore, he has asserted that “adaptability replace maturity” (p. 257). The present findings attest to the viability of such an extension of the CM construct. The measures of career decision-making behaviour in this study were found to relate in a functional manner to the developmental measure of CM in its current form. It may follow that these process measures (i.e., M & R) could be incorporated into a new configuration of this key career developmental construct. Future research would need to test such conjecture, for instance, by constructing a contemporary measure of CM that includes decision-making processes into its format. A combination of items measuring attitudes toward career decision-making along with the decision coping patterns to deal with them may provide a more appropriate indicator of career development in the new millennium.

Career decision-making self-efficacy was also found to be positively related to resolute decision coping patterns and negatively related to maladaptive ones. This supports Hypothesis 8A proposed by Lent et al. (1994), which states: “There will be a positive relation between self-efficacy beliefs and career/academic performance” (p. 100). Since M and R are self-reported measures of career-related performance in terms of decision-making behaviour, and since CDMSE was found to relate in predictable ways to these measures, the present findings provide evidence for the 8A supposition made by social cognitive career theorists.

The large body of research that attests to a moderate negative correlation between CDMSE and CI (e.g., Betz et al., 1996; Taylor & Popma, 1990) was also upheld in the present study. However, this relationship was found to be weaker amongst this sample of high school students than found previously with college samples ( $r = -.56$  versus  $r = -.34$ ). It is interesting to note that one other study (Gillespie & Hillman, 1993) that was conducted with a sample of high school students reported the same correlation coefficient ( $r = -.34$ ) as was revealed in the present study.

Perhaps the weaker negative relationship between CDMSE and CI for the younger students can be attributed, in part, to their lower levels of confidence in comparison with the older students. As postulated by Taylor and Betz (1983), “it may be that students who lack confidence in their ability to complete decision-making tasks fail to engage in those tasks and thus remain undecided” (p. 79). Younger people, who are in the midst of formulating their vocational identity and who are facing many career-related decisions, may experience more confusion and perhaps more inner conflict about their career decision-making ability than older participants. The young adults in the Betz et al. (1996) study presumably had already made at least some career decisions as part of their entrance into post secondary education. This may be the reason why they reported higher levels of CDMSE than the students in the current study. In turn, this may have influenced the stronger relationship found between their CDMSE and CI scores compared to the younger sample. Further investigation of a longitudinal nature is needed to test such speculation.

The final hypothesis in this first line of inquiry predicted CI to be positively related to M and negatively related to R. The correlation coefficients reflected the direction of these expected associations (i.e.,  $r = .27$  &  $r = -.22$ ) and were significant. However, they were weak relationships and as such, Hypothesis 1.6 was only partially supported.

*Interrelationships amongst the Career Development Variables and the Demographic/ Contextual Variables*

Gender, part-time work experience, school achievement levels, performance goals, and certainty of future plans were scrutinised in relation to CM, CDMSE, CI, M and R. All hypothesised associations were supported apart from the expectation that females would display more mature attitudes toward career decision-making than males. The CM levels of the present sample did not differ significantly according to gender. This finding was not surprising given the equivocal findings reported in the literature (e.g., Patton & Lokan, 2001). The outcome that CDMSE displayed no relationship to gender was also supportive of earlier findings (Bergeron & Romano, 1994; Luzzo, 1993b). It should be noted that interrelationships amongst the career variables investigated is indicative of sound internal validity for the present study.

Significant differences between boys and girls were found on three of the other variables examined, however. In all three instances boys fared more positively than girls. Boys displayed higher levels of career certainty, were more certain about their future plans and reported more resolute decision-making patterns. This was unexpected because, if gender differences have been revealed in the past, girls have usually been found to be more career mature than boys (see Patton & Creed, 2001). Hence, it seemed likely that girls would be more vigilant in their decision-making style than boys.

One possible explanation for this unexpected finding could be that the boys in this sample gave inflated estimates of how they coped with decision-making. Perhaps they were less aware of the gamut of decisions they needed to face and thus displayed false bravado about their approach to decision-making. Indeed, in a study conducted by Friedman (1991), girls listed more decision problems than boys. In addition, the females in a study of New Zealand adolescents (Tuck, Rolfe, & Adair, 1995) were found to be more indecisive than the males. Perhaps females in the present study were more aware of all the important decisions they were faced with. In contrast, the males may have mistakenly reported vigilant decision coping behaviours when, in reality, they were not fully aware of the gamut of decisions to be faced and thus felt more composed and in control than the females. Indeed, according

to Tuck et al., “females are more willing to admit to being cautious in the process of decision-making” (p. 62). Furthermore, since girls have been shown to be more flexible in their attitudes toward career (e.g., Albion, 2000; Carpenter & Inkson, 1999) this may explain why they are less certain about their plans than boys. Perhaps young women are more aware of the different roles they will need to play in their lives and thus experience more uncertainty and less resoluteness in decision-making than the males because they are considering how to accommodate these varied roles in their career paths.

There is another possible explanation for the females being less certain and less resolute than the males in the present study. This finding may be a reflection of the particular sample employed. The majority of the high school students who participated in the present study were from low socio-economic backgrounds, and as such, these disadvantaged circumstances may affect females’ career development more than males’. Indeed, in their review of the literature concerning career decision status and gender, wherein mixed results were reported, Patton and Creed (2001) suggested that the role of gender in the process of career development may be “determined largely by contextual factors (e.g., equality of opportunity and access to alternative career options)” (p. 339). It may be that the girls in this district perceive even less opportunity for finding satisfying and productive careers than the males and thus, find it more difficult to make decisions regarding their futures.

Both CM and CDMSE were found to relate to whether students had worked part-time or not. Those with work experience did display more maturity in their attitude toward, and more confidence in, their career decision-making than those who had never worked. Career maturity and CDMSE were also found to differ in relation to students’ estimates of their most common level of achievement across all subjects at school. As would be expected, more mature individuals had higher levels of achievement. High achievers were also more confident than those who were achieving at a satisfactory or low level. If students had specified their goals for the following year, their levels of CM and CDMSE were also higher than those who had no goals.

It should be noted, however, that these findings are correlational. Hence, it could be that those who are more career mature and who also display more confidence in their ability to make career-related decisions, in turn, seek out work

experience rather than the work experience leading to higher CM and CDMSE. Likewise, it stands to reason that these qualities (i.e., high levels of CM and CDMSE) would also enhance achievement levels and make it more likely that students had set career goals for themselves. Conversely, it may be that gaining work experience, achieving at a high academic standard and setting goals for the immediate future have positive effects on levels of CM and CDMSE.

Further research is needed to investigate these variables as they occur, for instance, over the duration of adolescence, to determine if causal paths could be identified. Indeed, Betz and Luzzo (1996) highlighted the need to clarify “the extent to which changes in career decision-making self-efficacy lead to other adaptive changes associated with career decision-making [when discussing research they believe] ... has yet to be systematically addressed” (p. 424). These authors emphasised the need for longitudinal research in order to answer many questions such as: “Do increases in CDMSE scores lead to decreases in career indecision, or is it a decrease in career indecision that leads to increases in CDMSE scores?” (p. 424).

The present study also revealed that setting performance goals was associated with CI and M. If these young people had set goals for themselves, they reported significantly less indecision and fewer maladaptive decision coping patterns than those who were unsure about their goals. Certainty of future plans was also found to be positively related to PG. It seems reasonable that those who had set immediate goals were more likely to report higher levels of certainty about their plans. Once again though, this order of association may occur in reverse. Perhaps if a degree of certainty is experienced, this may lead to one setting performance goals for themselves.

Career maturity was also found to be associated with CFP. The more certain students were about their plans subsequent to Year 10, the more mature their attitudes toward career decision-making. This has intuitive appeal since one would expect more mature individuals to be more certain of their plans. It also supports theoretical findings, which have viewed career decidedness as a developmental construct that serves as “another indicator of CM like exploration and planning” (Patton & Lokan, 2001, p. 41). It must be kept in mind, however, that since these findings are correlational, such links could operate differently. Perhaps those who report being certain of their future plans display more mature attitudes toward career

decision-making as a result. Likewise, resolute decision coping behaviours were related positively to CFP. It may be that those who display what Mann et al. (1989) refer to as “vigilant” decision-making competencies would conceivably be in a position to state that they were more certain about what they were intending to do once they finished Year 10 schooling. However, the reverse may also be true. Once again, more extensive research is required to unravel these causal speculations.

The CFP variable also appeared to act as a proxy for career decidedness. It demonstrated a moderate positive relationship to CC and CDMSE. Thus, students who were more certain also tended to be those who had more confidence in themselves as career decision-makers as was the case with earlier research. A conclusion drawn by Bergeron and Romano (1994), for example, mirrors this result: “Students who are less confident in their ability to complete the tasks and behaviours required for effective decision-making are more likely to report being vocationally undecided” (p. 23). These findings may therefore attest to the utility of the CDMSE scale as it appears to exhibit the same kinds of properties when high school students or adults are assessed. That is, for the present sample of adolescents, higher certainty is associated with higher confidence for career decision-making or *visa versa*.

Contemporary theories of career development, including SCCT, advocate the consideration of contextual factors in addition to within-person factors when examining the career choice process. “The manner in which the environment differentially inhibits or encourages an individual’s capacities to capitalize on personal characteristics and translate them into career futures” (Patton & McMahon, 1999, p. 68) defines the notion of contextual affordance as postulated by Vondracek, Lerner, and Schulenberg (1986). Acknowledging this supposition, the present study investigated two family-of-origin issues, namely, parents’ education and employment status, to see if these contextual factors were associated with the career development variables investigated (i.e., CM, CDMSE, CI, M and R).

The two measures of decision coping behaviour were not found to be associated with either of these contextual factors. It appears then that adolescents’ approach to decision-making tends toward either an adaptive or maladaptive style regardless of their parents’ educational or employment status. Future research needs to investigate other contextual variables to try to identify factors that are associated with decision coping behaviour. For example, it would be important to assess the

decision-making style of parents in conjunction with that of their offspring to see if the way in which parents typically approach decision tasks is related to the way in which their children approach important decisions. Indeed, according to Mann et al. (1989), the family is like a laboratory in which the adolescent “sees the effects of decisions made by others” (p. 274). These authors further contend that adults should not be solely relied upon to teach adolescents to “learn to become confident, competent decision-makers” (p. 276) as some parents may themselves be lacking in decision-making competence. The influence of parental decision coping strategies on their adolescent offspring needs to be formally investigated in future research.

Neither CM nor CI was found to be associated with parents’ level of education. However, the level of education that mothers attained was related to CDMSE. More educated mothers had children who were more confident in their ability to make career-related decisions. This result directly reflects the work done by Peterson (1993b) wherein college students whose mothers had lower levels of education also had lower levels of confidence in their career decision-making ability. Thus, the present study confirms Peterson’s finding and extends it since it was found to apply to younger students. Peterson proposed that well educated mothers may provide a more successful career decision-making role model for their children. This is a tentative abstraction, however, which needs more extensive testing before any substantive conclusions may be drawn.

Parents’ employment status was not associated with CDMSE or CM levels. Whether parents are employed or unemployed is not associated with levels of confidence in their children’s efficacy for career decision-making tasks. Likewise, levels of CM do not differ according to the employment status of parents. This latter finding was anticipated because employment was considered to be related to socio-economic status, which has not been linked to CM in the past (e.g., Super & Nevill, 1984). Since adolescents seem to develop in maturity and confidence regardless of their parents’ employment status, it may be that they are optimistic about their own futures and may not view their parents’ working life as being in any way reflective of their own career prospects. This could be the case inasmuch as adolescents tend to construct what Elkind (1967) described as a “personal fable” whereby young people think of themselves as being special and invincible. Hence, this sample of students may not have been affected by the employment status of their parents in terms of CM

and CDMSE because they saw themselves as being removed from this contextual affordance.

Levels of CI were found to be associated with parents' employment status, however. If both parents in the household were unemployed, students reported higher levels of indecision. It may be that having both parents out of work gives rise to more career indecision because children find this situation overwhelming and unsettling. Perhaps these students encounter the task of career decision-making more challenging and confusing because they have doubts about their choices in light of both their parents' inability to find work.

Students in the present study, regardless of gender, work experience, academic achievement levels or decision-making approach experienced around the 50<sup>th</sup> percentile CI score according to normative data (Osipow, 1987). This may contribute to Osipow's (1999) speculation about indecision and indecisiveness. Osipow argues that career indecision is a logical state during the "developmental phase through which individuals may pass on their way to reaching a decision" (p. 147). Whereas, he views indecisiveness as a trait displayed by individuals who repeatedly have trouble making career or other decisions. Longitudinal analysis of these measures would shed more light on this proposition. It would be important to find out if students assessed on CI and M, for example, would exhibit differences on these variables at other points in time in their lives. If, for example, some people had levels of CI that fluctuated and M levels that remained fairly constant and relatively high, we could surmise that such people may be the indecisive types as postulated by Osipow. Future research of this nature is warranted.

*Explanation of Variance in Career Maturity, Career Decision-Making Self-Efficacy and Career Indecision*

The results of the hierarchical regression analysis using CM as the DV served to further clarify this key career development construct. It showed that beyond the relatively substantial contribution of CDMSE and CI to the explanation of variance in CM, the decision-making behavioural measures of M and R added significant additional unique variance albeit to a lesser extent. Career certainty, the specification of performance goals and these decision coping patterns in combination contributed

just over 8% of unique variance in CM over and above the 29% of variance explained by CDMSE and CI. These results provide perspective on the relative importance of each of these IVs and further emphasise the need to focus on the enhancement of confidence, certainty, goal setting and adaptive decision-making behaviour in order to raise the CM levels of adolescents.

The hierarchical regression analysis of CDMSE also expanded upon the understanding of this key career development construct. It demonstrated that M and R made significant unique additions to the explanation of CDMSE (4.5% and 9% respectively). Although CM and CI explained 15% of the variance in CDMSE at Step 1, it seems that the performance measures of career decision-making styles may be other important IVs predicting students' confidence in their ability to perform career decision tasks. Career certainty and certainty of future plans were the only other additional variables to add unique variance to the explanation of CDMSE. This finding provides more evidence for the strong links between CDMSE and measures of decision-making performance and further attests to the importance of providing instruction in competent decision-making strategies in order to enhance CDMSE.

Just under 30% of the variance in CI was found to be explained by CM and CDMSE. The addition of M, R, CC, PG and parents' employment status into the equation contributed a mere 3.9% of extra unique variance. The most important contributor of this latter group was the employment status variable. Having both parents unemployed explained 2.2% of the variance in CI on its own. This indicates that students with both their mother and father not in employment would be a particular group of adolescents needing help to cope with indecision. Perhaps this also flags the need for the intervention to highlight a sense of optimism toward finding work regardless of the employment levels of family members.

It should be noted that the combination of all analyses conducted for Study 2 contributed to the overall internal validity of the thesis. These T1 data, while providing support for many of the hypotheses posed, also established sound baseline data for the intervention. This close scrutiny of the scales used at T1 also led to them being retained for the subsequent testing times.

*Implications for Intervention Design*

These results provide useful guidelines for intervention design. They have the potential to inspire ways in which to enhance more mature attitudes toward career decision-making and to facilitate more self-efficacy and less indecision for career decision tasks amongst adolescents. Indeed, the correlates of these constructs provide useful information about the types of things that are associated with the development of maturity, confidence and certainty in young people's career decision-making.

Career maturity levels of adolescents are associated with how confident and how certain or indecisive they feel about career decision-making. Even though it seems that these factors influence CM, since the findings of this study are correlational, it may also be the case that CM actually influences confidence and certainty/indecision levels. Nevertheless, when attempting to foster more mature attitudes toward career decision-making, interventions that aim to enhance confidence in career decision-making ability and assist students to become more certain about their choices seem warranted.

Moreover, since CM has been shown to be positively related to resolute decision coping patterns and negatively related to maladaptive ones, the facilitation of more mature attitudes toward career decision-making may require the inclusion of instruction in competent approaches to decision-making. Resolute behaviours such as being vigilant and taking care over decisions could be taught while also highlighting decision coping patterns that impede competence such as leaving decisions to others and deciding on the spur of the moment (as measured by M).

The results of the present study highlight similar issues in relation to the enhancement of CDMSE. This variable is also related to certainty, indecision and decision coping styles. Hence, it appears there may be benefits for students in terms of building confidence for career decision tasks by teaching them how to cope with the experience of indecision during their quest to make career-related choices. They could be encouraged to accept indecision as a normal process to be encountered and thus avoid interpreting it as a poor reflection on their decision-making ability. The more students face up to the important career-related decisions they are confronted with, the more practice and experience they will gain, and gradually this will result in the development of more confidence in their ability to handle such choices. This is

essentially the theory behind self-efficacy and perhaps such a process needs to be explained to adolescents so they can benefit from an understanding of this well researched phenomenon.

Students could be encouraged to challenge themselves and take small steps with regard to the various career-related decisions that they encounter during their Year 10 schooling. If these steps were itemised for them, and they were given opportunities to experience performance accomplishments on the way to an important decision, they may experience less indecision and thus, feel more confident about their ability to make career-related decisions in the future.

As part of the Australian education system, young people are required to make subject selections for Year 11 at the end of Year 10. This presents many challenges, not the least of which is deciding whether they will indeed remain at school for Years 11 and 12, or seek an apprenticeship or job after completing Year 10. Students need to know how to break up the subject selection decision into smaller compartments so that they don't become overwhelmed with the myriad of choices on offer. Several decisions will need to be made along the way. For example, students need to become aware of the interests and talents they possess that may have career relevance. Next, they need to determine what goals are important to them, and then they need to decide upon which scholastic or training avenues they may want to set for themselves.

Once students are made aware of their temporary state of indecision, and that this sense of inner conflict and confusion is not something to be feared or avoided but rather a state within the normal process of career decision-making, they may be better placed to approach these decision tasks effectively. It could also be useful to instruct students to view decision-making as a process of adaption as suggested by Savickas (1997). To increase their chances of building efficacy in this domain, students may also need some scaffolding in terms of learning particular decision coping strategies and skills. Specific instruction on resolute decision coping behaviours and the disadvantages of maladaptive styles such as panic or complacency may enhance confidence levels.

Furthermore, the results highlight the need for specific guidance in goal setting. Students in the present study who were able to cite the goals they had set for themselves for the year following Year 10, were shown to be advantaged in terms of

maturity, confidence, indecision and decision coping behaviour. Their peers who had not made plans would presumably benefit from training on how to go about setting goals. Indeed, according to SCCT, being able to specify clear and specific personal goals that are “divided into sub-goals, set close in time to intended actions ... and held with strong commitment” (Lent et al., 1999, p. 306) is a key motivator of career choice behaviour. Hence, training in goal setting strategies is warranted.

Part-time work experience and improving academic standards seem likely to be associated with higher levels of CM and CDMSE according to the present findings. Hence, students need to be made aware of these links. The intervention may well need to include some discussion on the ways in which work experience can be helpful. For example, it may be that students who have work experience have a better understanding of the world of work and what employers expect of them. Indeed, the findings of Creed and Patton (In press) could be used to guide the instruction in this regard since the students they examined who had part-time work experience displayed similar outcomes. It may also be prudent to emphasise the link between high achievement levels and more career maturity and confidence so that students can see the advantages of trying to achieve at their best.

Another group of results that warrant attention concerns the gender differences revealed in the present sample. Compared to the females in the study, the young men displayed more certainty and reported the use of more resolute decision coping behaviours. Perhaps this is a reflection of more able males in this sample. However, this does not seem to be the case since there were no gender differences found on any of the other variables including CM and school achievement levels. As posed earlier, it may be that the boys were displaying a certain amount of false bravado. If this is the case, some emphasis on this possibility should be incorporated into the intervention.

In their discussion of attitudinal constraints on adolescent decision-making, Mann et al. (1989) pointed to some students’ reluctance to engage in decision-making. They postulated that complacency toward making decisions could be “a protective device to mask anxiety” (p. 273) and that perhaps in some schools there is a culture that dictates to its student body that it is “cool” to be unconcerned. Lent and his colleagues (1999) have also touched on a related aspect of adolescent behaviour

citing “negative peer influences [that] may undermine well-intentioned efforts to promote academic motivation” (p. 309).

In the present study, it appears that something of this nature may be occurring. Boys are seemingly more certain and resolute about their career decisions than girls. It would be important to keep this in mind when working with boys during the intervention to explore if this is the reality of their state of decision-making ability or if indeed, a certain sense of over confidence is at play. It is interesting to note that several participants in Study 1 maintained that some students exhibited a degree of confidence that they thought was unfounded. Perhaps these boys are asserting themselves by claiming and acting as if all is under control. However, when this aspect of their persona is explored, a less certain and resolute state of being may actually be uncovered. Hence, the intervention should ask students to question their level of certainty and to examine their decision-making styles. It needs also to prepare students, particularly the boys, for the possibility that they may be acting under a false sense of confidence as a coping mechanism and that this attitude should be assessed and reframed.

There is an opposing perspective to take into consideration, however. In addition to focusing upon the possibility that boys’ levels of certainty and resoluteness may be unrealistic, the intervention should attempt to address the girls’ lower levels of these variables. In line with the speculation about females’ perception of reduced opportunity in the labour market discussed earlier, it may be necessary to encourage more extensive career search behaviour in order to widen the career options under consideration. This would be a worthwhile component to include in the intervention for all Year 10 students who are to take part in it, but perhaps one that would be particularly of benefit to the females in the sample. With a much more broad array of careers under consideration, the girls may feel less perturbed about their career prospects and thus they may become more certain and resolute in their approach to career decision-making.

Finally, there were two other findings that may need to be considered during the intervention. They concern those students whose mothers have not gained post secondary education and those whose parents are both unemployed. Both groups of young people were disadvantaged in terms of CDMSE and CI respectively. Since the intervention will be a course of instruction for whole class groups of students, it

seems these aspects will not be able to be addressed directly. However, it would perhaps be helpful to highlight a sense of optimism toward attaining post secondary educational and employment goals regardless of the experiences that parents had undergone. In a context of high unemployment and low socio-economic backgrounds, this particular cohort of students may need specific guidance to adopt more positive outlooks with regard to their career-related decisions and goals. Indeed, some attempt at training students to adopt a positive outlook seems doubly warranted in light of the findings of Study 1 concerning the recurrent theme of impending unemployment discussed in the previous chapter.

Despite the range of insights that these results provide to inform intervention design, these correlational findings signal an ongoing need for the implementation of more complex research designs so that causal relationships amongst these constructs may be inferred. Longitudinal examination is especially warranted in order to address questions such as what leads to more career maturity and less career indecision and what ensues from increments in these variables? Research needs also to identify the antecedents and consequences of more adaptive decision coping styles. In addition, longitudinal studies need to be conducted in order to address specific questions that have been posed in the literature. For example, do “increases in CDMSE scores lead to decreases in career indecision, or is it a decrease in career indecision that leads to increases in CDMSE scores?” (Betz & Luzzo, 1996, p. 424).

In addition, since the present study demonstrated that the variables investigated managed to account for 42.6% of variance in CM, 53.2% of variance in CDMSE, and 33.4% of variance in CI, additional predictor IVs need to be identified. It will be important to expand upon these findings in future to determine if certain other variables could be found to contribute further to the explanation these key career development constructs.

## CHAPTER 6

## Intervention: The Career Choice Cycle Course

This chapter provides an account of the Career Choice Cycle Course (CCCC), which was developed as the intervention to be evaluated in the present research project. The predominant background issues that shaped the design of this intervention will be outlined first. Following this, a study by Chartrand and Rose (1996) is presented to illustrate how it influenced the basic format of the present career education intervention. The CCCC itself will then be described in terms of its implementation, content and pedagogical features. It should be noted that much of this chapter has been published previously (Prideaux, 2001).

*Prominent Background Issues*

Three sources of information were utilized to inform the design of the intervention. They were the review of relevant career development literature presented in Chapters Two and Three, as well as the analyses of interview, and cross-sectional data presented in Chapters Four and Five respectively. In order to clarify the scope of topics uncovered, and to capture the most salient issues, this material was combined and summarised. This aggregate of information formed a clear picture of the career education needs of high school students in general, and the present cohort of Year 10 students, in particular. The prevalent topics that came to light as a result of this careful scrutiny of the literature review, the qualitative data (Study 1), and the cross-sectional data (Study 2), are discussed below. Table 6.1 provides a synopsis of the main points.

Table 6.1

*Main Issues Generated by the Literature Review, Study 1 and Study 2*


---

| Career Education Needs   |
|--|
| <p>Guiding Principles:</p> <ul style="list-style-type: none"> <li>• Process oriented - process skills not career information</li> <li>• Holistic and facilitative - not specific and instructive</li> <li>• Coherent and well structured - theoretical basis and contextual grounding</li> <li>• Career development - dynamic and cyclic, career indecision expected</li> <li>• Gender differences - special needs, beware gender stereotyping of careers</li> </ul>   |
| <p>Personal Attributes to Target:</p> <ul style="list-style-type: none"> <li>• Personal responsibility – encourage students to become active agents</li> <li>• Coping skills – e.g., resoluteness, optimism, motivation, decision maturity</li> <li>• Beneficial characteristics – e.g., persistence, resilience, sound work ethic</li> <li>• Life long learning – acceptance of, and active engagement in</li> <li>• Self awareness – realistic appraisal of ability, challenge false bravado</li> <li>• Self-confidence – self-efficacy for career decisions, avoid complacency</li> </ul> |
| <p>Increase Awareness of:</p> <ul style="list-style-type: none"> <li>• World of work – changes, no job for life, needs of future unpredictable</li> <li>• Expand options – consider broad array of careers, challenge narrow view</li> <li>• Context of career development – people, environment, beliefs, cognitions</li> <li>• Influences – hindrance or helpful, role models, spectre of unemployment</li> <li>• Academic achievement – correspondence with career development</li> </ul>   |
| <p>Specific Skills or Training Required:</p> <ul style="list-style-type: none"> <li>• Decision-making – importance of, dynamic process, skills and strategies</li> <li>• Coping styles – adaptive (e.g., vigilance), maladaptive (e.g., avoidance)</li> <li>• Goal setting – challenging but realistic, matched with ability, procedure</li> <li>• Self-efficacy – affects career decision-making, goals, performance etc.</li> </ul>  |

---

### *Guiding Principles*

Certain premises for the design of the intervention were revealed. First and foremost, the need for a process-oriented focus was clearly indicated. This meant that the intervention would have to provide process skills rather than career information, and it would need to be holistic in terms of its scope as opposed to narrowly targeting specific aspects of, for example, preparation for work. Hence, the intervention was to be comprehensive rather than specialised, and facilitative rather than instructive.

The combination of sources scrutinized also highlighted the need for the intervention to be coherent and well structured. The benefits of employing a sound theoretical basis, and the need for contextual factors to be closely considered were particularly evident. It also became clear that the intervention would need to foster an understanding of the cyclic nature of career development and therefore, encourage students to view career decision-making as a dynamic process that individuals would typically revisit many times in their lives.

The material examined also established that the intervention would need to explain the experience of career indecision in terms of something to be accepted and faced, rather than avoided and feared. The need for facilitators to be aware of the possible differences amongst males and females with regard to their approach, and response to, the intervention was yet another important piece of information to emerge. Moreover, the tendency toward gender stereotyping of occupations amongst students was revealed, providing another issue for facilitators to be cognizant of during the delivery of the intervention.

### *Personal Attributes to be Promoted*

A wide variety of issues pertaining to the need for certain personal attributes to be enhanced were uncovered across the three sources of information examined. Firstly, the intervention would ideally motivate students to become active agents in their own career development and thus, help them to become personally empowered. In today's context, it is important that a sense of personal responsibility be adopted and that adolescents learn how to manage their own career paths and take control of their own career-related decisions. Therefore, these young people need to be equipped with the coping skills necessary to face their futures with a more resolute

and optimistic outlook. Attributes such as motivation, persistence, and resilience to setbacks were highlighted as qualities needed by young people to manage the complexity of career-related endeavours in the new millennium. Furthermore, it was evident that the intervention would need to disseminate an understanding of career development as a lifelong process that individuals must be actively engaged in and one that entails continual upgrading of skills through lifelong learning.

A heightened awareness of self was another broad area of personal development identified as needing attention. Students would have to become more self reflective, for example, in order to clarify their career-related interests. A realistic appraisal of one's true aptitude and academic ability was clearly warranted. The underlying problems of false bravado and narrow, unrealistic career aspirations also needed to be addressed by the intervention and low self-confidence was a central personal factor that obviously needed attention. In particular, students' self-efficacy for career decision-making was to be a key target of the intervention. Aversive characteristics such as complacency, a poor work ethic, and resignation to unemployment were still more personal issues that the intervention would seek to attenuate. Such negative attributes would need to be brought to light and students' understanding of how they may be shaping their career-related behaviour needed to be enhanced.

#### *Elements Requiring Increased Awareness*

There were some aspects to emerge from the scrutiny of all material collated, which were identified as requiring specific emphasis during the intervention to heighten students' awareness of them. The first of these concerned the volatility and complexity of today's world of work. It was apparent that the intervention would need to inform students about the changing work environment. Students need to be aware of, for example, how changeable the skills demands of the future will probably be, and that it is likely they will be employed in a variety of occupations during the course of their working lives. Students' narrow view of careers would also need to be addressed by encouraging more extensive career exploration and by having them consider alternative pathways rather than basing all their hopes and plans on a single option.

The role of various influences impacting upon career decision-making was another major issue related to students' career development that was identified as requiring particular emphasis during the intervention. Across the three sources of information examined, this element emerged in various ways but largely highlighted the need for students to become more aware of the variety of people, events, circumstances, and individual characteristics that can either benefit or hinder their career development. Adolescents in general, and the students for whom the present intervention was to be designed in particular, were viewed as needing to be more mindful of the social context in which they make career-related decisions. The intervention would need to include, for example, discussion about high unemployment and how this could produce cynicism about finding work, and in turn, could have a detrimental effect on career decision-making. The sources of information examined also indicated that students would benefit from being made aware of the links between academic achievement and career development.

#### *Specific Skills or Training Required*

There were three areas identified that were clearly in need of deliberate and specific training. The first of these was students' decision-making. The material scrutinised established a number of means by which this important aspect of career development could be approached. In general, the intervention would need to highlight the importance of making sound career-related decisions in today's context as well as provide students with the necessary skills and strategies to make them. One way the intervention could enhance decision-making as suggested by the material examined was to have them discuss typical approach behaviours related to decision-making and assist them to identify which strategies would be adaptive and thus, helpful, and which would be maladaptive and thus, unhelpful.

The second area requiring specific training was that of goal setting. A crucial factor to emerge was that students clearly needed to formulate more realistic aspirations. The intervention should aim to encourage students to gain an accurate picture of their ability, in particular career-related domains, and assess what career choice goals would represent an appropriate reflection of their aptitude. The information gleaned from the three sources also pointed to a need for each individual

to become more cognizant of their own career-related interests so that goals would be personally relevant. Overall, the intervention needed to incorporate activities designed to teach students how to set challenging goals for themselves, and provide them with the procedural skills required to break goals down into small, achievable steps.

Lastly, the material used to inform the design of the intervention led to the proposition that students may benefit from specific training in career self-efficacy. It seemed feasible that gaining an understanding of the concept, process and consequences of self-efficacy for career decision-making may be of particular benefit to these students since the background information examined showed these young people were generally lacking in self-confidence. If students' self-statements could be brought to their conscious awareness, and if they could be taught how thought patterns about perceived ability affected their approach to various tasks, they may be able to use this knowledge to their advantage. For instance, students may learn how to challenge and reframe negative self-statements about their ability to make sound career-related choices and thus, enhance their career development.

#### *Precursor to the Career Choice Cycle Course*

What follows is a brief description of one particular study (Chartrand & Rose, 1996) based on social cognitive career theory (SCCT) that inspired the basic format of the CCCC. Chartrand and Rose applied social cognitive influences to a population deemed "at-risk" for experiencing employment and career barriers. These authors postulated that SCCT was particularly suitable for those who held lower career expectations and experienced "a lack of opportunities in employment and career development ... tied to a cycle of poverty" (p. 342). Indeed, Chartrand and Rose expressed the opinion that the majority of career development theories have relevance for only a small proportion of the population, referring to those who can reasonably count on gaining employment and who are at liberty to choose their preferred occupation. Chartrand and Rose commended SCCT for its use of "constructs that account for differences in environmental opportunities as well as for individuals' beliefs about the environment" (p. 343). They stressed the importance of taking into consideration the environmental realities that at-risk clients have to face

and highlighted the value of SCCT's concepts in this regard. In particular, contextual affordances were endorsed as useful, identifiable factors that influence beliefs, learning experiences, and the formation of interests, goals and performance attainments.

A group of 60 female offenders due for release within six months from an American correctional facility took part in a 12-week career development program (Chartrand & Rose, 1996) entitled PROVE (Preventing Recidivism through Opportunities in Vocational Education). The program aimed to improve occupational knowledge and career self-efficacy while also enhancing decision-making skills, career planning and search skills, as well as work adjustment. The SCCT concept of reciprocal determinism was emphasized. Thus, considerable stress was placed on the influence people have on their own overt behaviours over and above the interactive causal influences of personal attributes and environmental factors. The participants were encouraged to raise awareness of the impact of their behaviour and to channel this positively by developing a sense of personal agency and individual responsibility for change.

The career choice model (see Appendix A) within the SCCT framework was adopted and modified to illustrate various components of the program. For instance, the women began to describe their identity by building a picture of their *person inputs*, such as African American selfhood, and *background factors*, such as rural or city upbringing. This formed the first part of the PROVE model, and was followed by segments denoting "Things you learned", "Who you are", "What you want to do", and "What you accomplish" (Chartrand & Rose, 1996, p. 347). Thus, the theory was translated into lay terms and was used as a reference throughout the program.

The translation of the SCCT choice model devised to act as a guide for participants during the CCCC intervention (see Appendix F) was based upon the model submitted by Chartrand and Rose (1996, p. 347). Chartrand and Rose also inspired the design of the present intervention through their clear explication of the way in which social cognitive constructs and assumptions can assist those from disadvantaged backgrounds. Their logical reasoning of the theoretical evidence and effective application of theoretical concepts and processes provided considerable impetus for the creation of the CCCC.

*Implementation of the Career Choice Cycle Course*

The Principal of the school where the present study took place acted as the primary gatekeeper for the entire research project. This person chaired joint meetings with the university stakeholders, relevant school staff members, and the parent body during the year to ensure appropriate levels of communication were maintained. The entire staff of the school were addressed by the Principal and the researcher initially, and meetings with the pertinent department in which the course was taught were also held periodically. The Deputy Principal took on administrative tasks such as scheduling for interviews (Study 1) and organising testing of all year 10 classes at the same time on each of the four occasions to evaluate the course. In addition, the Deputy Principal coordinated the timetable for the delivery of the course.

The researcher was the facilitator in the first delivery of the course to half of the year 10 students. Four teachers undertook to facilitate the subsequent delivery of the course with the wait-listed group of classes.

The teachers were trained via observation of the delivery of the intervention by the career development "expert" (the researcher) during the first delivery of the course. Furthermore, teachers took part in weekly consultation sessions with the researcher in order to give them the opportunity to ask questions and to gain an understanding of the rationale for all aspects of the course. Detailed lesson plans and all overhead transparencies were provided to ensure consistency of delivery. A Teacher's Guide with information sheets to accompany each week's lesson, lists of the materials required, aims and evaluative strategies for each of the lessons were also supplied. In addition, booklets with activities and weekly homework assignments were given to each student.

Experiential learning theory (Kolb, 1984) was utilized to drive the composition and pedagogical process of the intervention. As such, each lesson was designed to allow students to continually pass through an experiential learning cycle with the aim to facilitate the construction of knowledge by each individual via their own processes. In the main, students worked in groups engaging in structured experiences, reflecting upon them to abstract and share insights. This experiential learning process was utilized to give each student the opportunity to think about, learn about, and perhaps modify their own cognitive and affective career-related

behaviour. Specifically, the experiential exercises were used to encourage the students to discover, interpret and appraise their interests, beliefs, values, confidence levels, decision-making habits and personal qualities.

### *Program Content*

The Career Choice Cycle Course is designed to run for six weeks taking up one 70 minute period per week. Each of the six lessons begins with reference to the basic component of the SCCT choice model (see Appendix F) that is to be the main topic for that particular session. This course framework is displayed using an overhead transparency and students can also refer to the front cover of their activity booklets as it is reproduced there as well. Thus, the model acts as the focussing activity for each lesson. At the end of each lesson, students are required to reflect on what they have gleaned from the discussions and activities they have participated in. Their ratings about how well they felt they understood the topic covered, and comments about the knowledge or insights gained, are then recorded in the back page of their booklets. After this, the homework assignment to be completed by students prior to the next week's lesson is explained and the relevant pages of their booklets set.

The first lesson, entitled *Career Development Influences*, corresponds with the "Person Inputs" and "Contextual Affordances" part of the SCCT choice model (Appendix A). This lesson begins by setting the scene for the course. Students are assigned to groups for activities and discussion. The CCCC model (Appendix F) is introduced to orient participants to the course content and the student booklets are distributed to clarify expectations regarding the necessary criteria to gain a certificate for completing all course requirements. The remainder of the lesson focuses upon activities to bring possible career aspirations to students' conscious awareness and develop their understanding of the context in which career development takes place. By utilizing Patton and McMahon's (1999) Systems Theory Framework of career development, students are guided to assimilate past experiences with the prevailing influences on the interests they have developed and the careers they may be considering. During this lesson students are also acquainted with the changing nature of the world of work through discussion of various quotations regarding social and

technological change, new skills demands of the future, and employment predictions for the new millennium.

Lesson two, *Things You've Learned*, is aligned with the "Learning Experiences", "Self-Efficacy" and "Outcomes Expectancies" part of the model (Appendix A). During this lesson, students are encouraged to think about how confidence levels and outcome expectancies affect their approach to, and success in, a variety of career-related endeavours. They discover that task specific confidence (self-efficacy) affects the *goals* people set for themselves; how much *effort* they will give to a task; how long they will *persist* with a task; how they will *respond* to setbacks; and how they will *cope* with failure. The importance of having confidence in one's ability when approaching career-related decisions is highlighted by using an example that the students are faced with in Year 10, namely, subject selection for Years 11 and 12. Tactics for increasing confidence levels are also generated during this lesson. Students are made aware of their self-statements when approaching difficult situations and are induced to reformulate derisive or pessimistic thoughts to more "helpful" or optimistic ones. They are asked to devise likely scenarios when different approaches to career decision-making are adopted (e.g., complacency versus resoluteness) and thus guided to discover advantageous qualities such as persistence, resilience, and a sound work ethic. The need for a sense of personal responsibility is emphasised throughout this and subsequent lessons.

Personal interests provide the focus of the third lesson entitled *Who You Are*. Once again, this relates directly to the SCCT model (Appendix A) where interests are depicted as an important intervening variable within the career choice cycle. Students learn about how their interests, abilities and talents develop. The link between what they're interested in, or believe they're good at, and how this affects career-related decisions is highlighted. Students complete an interest inventory during this lesson and they are encouraged to use their resultant interest profile to broaden their occupational perspective, identify foreclosed occupational options, and reassess the type and variety of careers they are considering. This lesson provides some hands on job search experience using a government publication entitled the Job Guide, which is distributed to each Year 10 student in Australia. The need to make realistic assessments of one's ability is stressed and the issue of false bravado is carefully addressed. Students are introduced to the notion of this demeanour being a possible

mask for anxiety. The experience of career indecision is normalised by making students aware that such a state is to be expected during their adolescence and that they need not fear it or try to avoid it by using a “cover-up” such as false bravado or seeming indifference.

The fourth lesson aims to help students recognise the need for control over their own destiny and emphasizes that one's individual approach to career search/choice activity determines outcome. Labelled *What You Want To Do*, and in association with the "Choice Goals" and Choice Actions" part of the model (Appendix A), the activities in this lesson call attention to the characteristics of effective goal setting. For example, students are taught how to break long term goals into sub-goals, how to frame their goals in specific and measurable terms, and how to set challenging but realistically achievable goals for themselves. Additionally, the notion of satellite careers is introduced whereby students discover the advantages of having multiple pathways to their ultimate career goals.

Having learnt about what influences career development, how confidence levels affect career-related behaviour, how interests develop, and how to set realistic and achievable goals, the next lesson is about how to make a career-related decision and act upon it. It is called *Decide and Go For It!* This represents the "Performance domains and attainments" part of the SCCT model (Appendix A). Mann, Harmoni & Power's (1988) GOFER course is introduced to the students to provide them with a five step strategy for sound decision-making: "Goals clarification, Options generation, Fact-finding, consideration of Effects, Review and implementation" (p. 161). The activities include helping students gain an awareness of different decision-making styles to assess their strengths and weaknesses, bringing to conscious awareness the decision-making style that each student typically employs, discussion of decision-making strategies and observation of these applied to simple decision-making tasks. As a homework task, students are instructed to apply the GOFER decision-making strategies to a personal decision-making exercise.

Finally, students are made aware of the cyclic nature of career development. They learn that when they finish school they are not "finished products" and that their likely progress through a variety of occupations will oblige them to become lifelong learners. This lesson aims to prepare students for the possibility of barriers and setbacks during their careers. It stresses the skills they have learnt and how these will help them to keep cycling through career development processes in the future. It

is entitled *Grow, Review and Recycle* and is theoretically related to the notion of recursiveness within the Systems Theory Framework (Patton & McMahon, 1999). Recursiveness expands upon SCCT's (Lent et al., 1996) contextualist concept of triadic reciprocity going beyond dynamic, bidirectional interaction between internal personal factors, behaviour, and the external environment. Systems theorists, while endorsing the mutuality of reciprocal interactions, consider this model "bound by linear and causal principles" preferring a view of career development that occurs via "multidirectional nonlinear feedback" (Patton & McMahon, p. 152). Accordingly, students are asked to revisit the factors influencing their career development discovered during the first lesson and think about how these may change over time. This lesson also provides an opportunity for revision and consolidation of the material covered throughout.

#### *Pedagogical Features of the Career Choice Cycle Course*

As discussed previously, the format of the lessons was drawn from experiential learning theory. Hence, activities generally proceed using inductive means. In other words, students learn by "doing it" rather than "hearing it" wherever possible. In addition, research in the field of cognitive psychology (e.g., Best, 1995) informs us that students benefit from a priming of stored information to facilitate the retention, recovery and elaboration of knowledge. This is the reason why all lessons begin with an introductory discussion for previous learning to be examined and summarised using the CCCC model as a prompt. Indeed, the Teacher Guide includes a series of suggested questions that facilitators may use to generate recall of previous content and processes. Lessons conclude with a recapitulation of the information and insights gained during that particular session to encourage self reflection and provide ongoing evaluation of the course.

Hence, self-evaluation is promoted throughout the course. The personal and teacher ratings and comments made following each lesson at the back of the student booklets provide a record of this reflective process. The career development "expert" and teacher facilitators were required to monitor this independent activity on a weekly basis to check on individual progress and to see how the students were comprehending the course content in general. Specific written activities to be completed in class as well as homework tasks were also checked off on this page to

provide ongoing evaluation of the intervention on an individual basis. Having students record their weekly progress is also intended to motivate them to adopt a sense of personal responsibility for the fulfilment of course requirements.

In order to initiate experiential learning, students engage in structured experiences whereby they discover meaning for themselves and corroborate their own learning through open discussion with their peers. Following this, they need time and further structured activities to reflect upon and grasp new concepts as well as integrate them to achieve behaviour change. Obviously, this is a tall order for a mere six lessons. However, if students are accustomed to such a process and are also comfortable and willing to talk about their internal cognitive and affective experiences, the CCCC is anticipated to be an effective career development tool. It is also expected that students will participate more and gain full advantage from the course if it is conducted in a congenial learning environment with a facilitator they can relate to. Moreover, individual ideas and opinions must be valued and not submitted to prejudice or harsh judgment otherwise students may become withdrawn.

### *Concluding Comments*

The CCCC possesses clear, strong points over and above the ad hoc style of course development and implementation that currently typifies Australian career education. First and foremost, it encompasses the sound theoretical basis of SCCT. This feature alone gives it distinct advantages, most notably, the well-established, contemporary constructs and processes utilized. Second, the CCCC is developed from a dual theory/practice perspective. As such, the people who were to be the recipients of the course, along with their parents and the school community, were consulted so that the empirical reality of their particular career education needs was ascertained and given close consideration. Third, the CCCC has been developed within an atmosphere of cooperative collaboration between educators and researchers. Consequently, the Career Choice Cycle Course is the product of what many in the field of career development have been calling for. That is, a careful process of stakeholders informing theory, and theory informing the practice of career education. Indeed, according to Collin and Young (1986), this contextualist approach is the means by which we can “open up new ways of thinking regarding career and generate the level of understanding of careers needed in a changing world” (p. 850).

## CHAPTER 7: STUDY 3

## Longitudinal Study

The longitudinal effects of the career decision-making education intervention were evaluated in Study 3. The outcomes assessed were the same key career development constructs as those examined in Study 2. Therefore, the analyses centred upon career maturity (CM), career decision-making self-efficacy (CDMSE), career indecision (CI), and maladaptive and resolute decision coping patterns (M and R). The correlates of these key variables explored in Study 2 were retained where applicable. This longitudinal study utilised data gathered at four testing times, which were labelled Time 1 (T1), Time 2 (T2), Time 3 (T3), and Time 4 (T4).

It is important to note that those who undertook the intervention with the “expert” facilitator (Expert group) did so between the first two testing times. As such, their pre-test and post-test data were collected at the T1 and T2 testing times, whereas, those who undertook the intervention with regular teachers as facilitators (Teacher group), did so between the T2 and T3 testing times. Therefore, the T1 and T2 data for the Teacher group served as wait-listed Control group data, and the pre-test and post-test data for the Teacher group were the T2 and T3 survey results for these students. The Design section of this chapter will provide further clarification of this methodology, and a detailed account of how the data file was organised to carry out the various analyses undertaken is provided in the Results section. In effect, Study 3 comprises eight components corresponding to the eight different ways in which outcome variables were scrutinized. These eight sections are summarised below to provide a brief outline.

The aim of the first part of Study 3 was to determine whether the intervention had an effect on all students’ career development and whether its impact differed according to gender. Pre-test and post-test data from both groups who were given the intervention (i.e., Expert group and Teacher group) were combined to compare the results of males and females overall. The second section of Study 3 compared the two modes of delivery of the intervention. It aimed to determine if outcomes differed according to whether students undertook the course with a career development “expert” or a regular classroom teacher as their facilitator.

In the third and fourth parts of Study 3, the short term outcomes of the intervention in comparison to the wait-listed Control group were investigated. In the third section, the intervention, when facilitated by the career development “expert”, was evaluated. Pre-test and post-test data for the Expert condition students, who were given the intervention first, were compared with the Teacher group’s T1 and T2 data, which formed the wait-listed Control group. In the fourth section, the short term outcomes of the intervention, when facilitated by regular classroom teachers were assessed. Since the students in the Teacher group were given the intervention between the second and third testing times, they were able to act as their own controls. That is, the wait-listed Control group data were compared with the pre-test and post-test data of the Teacher group.

The fifth section of Study 3 aimed to determine whether the theory based intervention had any advantages over a generic vocational education course. A group of students enrolled in a school based vocational course, who did not receive the intervention (Generic group), were compared with a matched sample drawn from the Teacher group.

Long term outcomes of the intervention were assessed in the sixth and seventh sections of this study. In the first instance, this was achieved by tracking the Expert group students across the four times tested. This part of the study aimed to assess Bandura’s (1986) belief about the possibility of a temporal lag effect. It compared outcomes found immediately after the intervention, at the follow-up post-test eight weeks later, and outcomes assessed at the fourth testing time, which was 20 weeks after the intervention. In a similar fashion, the long term outcomes for the Teacher group students were also assessed in the seventh section, but this time, since they were presented with the intervention later, their pre, post and 12 week follow-up results were scrutinized. Thus, the long term effect of the intervention for this group could only be tracked across three testing times.

The last part of Study 3 aimed to collate supplementary evaluative data gathered from student feedback sheets, reflexive accounts produced by the facilitators and guidance personnel reports. These data were used to provide triangulation. Evidence for the effect of the intervention apart from the survey based evaluation was examined in this final part of the present longitudinal study.

*Research Questions and Hypotheses*

This study entailed eight research questions. Hypotheses accompanying each question were based on meta-analyses of the relevant literature (refer to Chapter 2, e.g., Baker & Taylor, 1998; Oliver & Spokane, 1988; Spokane & Oliver, 1983;) whereby career interventions have generally been found to lead to, at the very least, modest positive effects. Findings from Study 2 also guided the formulation of hypotheses.

- 1 Does the intervention have an effect on students' career development and does it have a differential impact upon males and females?
  - 1.1 It is expected that students' levels of CM, CDMSE, CI, M and R will be enhanced following the intervention compared to their pre-test scores on these variables.
  - 1.2 Since there were clear differences in the results of Study 2 concerning gender, it was expected that males and females would generate a different pattern of pre-test to post-test results.
- 2 Does the intervention have a different effect according to mode of delivery?
  - 2.1 It is anticipated that there will be some discrepancies between pre-test to post-test outcomes for students who had the "expert" facilitator as opposed to those who were given the intervention with regular teachers as facilitators.
- 3 What are the short term effects of the intervention when it is facilitated by a career development "expert" compared to the Control group?
  - 3.1 Students who receive the theoretically based career education intervention with a career development "expert" facilitator are expected to display higher levels of CM, CDMSE, and R and lower levels of CI and M from pre-test to post-test than controls.
- 4 What are the short term effects of the intervention when a regular classroom teacher facilitates it?
  - 4.1 Students who receive the theoretically based career education intervention with a regular classroom teacher as facilitator are expected

to display more CM, CDMSE, and R and less CI and M from pre-test to post-test than controls.

- 5 Does the theory based intervention have any advantages over a generic vocational education course?
  - 5.1 Students who receive the theoretically based career education intervention facilitated by a regular classroom teacher are expected to display more CM, CDMSE, and R and less CI and M from pre-test to post-test than those who do not experience this intervention but who experience a school based, generic vocational course also taught by regular classroom teachers.
- 6 Will students taught by the career development “expert” display more positive gains eight weeks after the career decision-making intervention than immediately following it, and if so, will these gains be retained a further twelve weeks later?
  - 6.1 In line with Bandura’s (1986) suggestion that newly acquired efficacy may lead to more investment in activities related to that domain over time, it is anticipated that students will display greater gains in terms of CM, CDMSE, and R and less CI and M at subsequent testing times. It is hypothesized that this group of adolescents’ levels of CM, CDMSE, CI, M and R will be positively enhanced eight weeks after the intervention compared with immediately after the intervention and that they will be further enhanced at the twelve week follow-up post-test.
- 7 Will students taught by regular classroom teachers display more positive gains twelve weeks after the career decision-making intervention than immediately following the intervention?
  - 7.1 It is hypothesized that this group of adolescents’ levels of CM, CDMSE, CI, M and R will be more enhanced twelve weeks after the intervention than immediately following the intervention.
- 8 Will supplementary evaluative data gathered from different sources reflect the findings of the survey data?
  - 8.1 It is expected that students’ ratings and comments, facilitators’ reflexive accounts together with guidance personnel reports will be supportive of the findings of the analyses of the self-report survey data.

## Method

*Design*

Study 3 comprised a mixed factorial design. Seven mixed repeated measures multivariate analyses of variance (MANOVAs) were conducted on the survey data. The within subjects independent variable (IV) in these analyses was the test taken, labelled Time. This IV involved two, three or four levels depending on the particular analysis conducted. In the first five analyses, Time involved two levels, namely, the pre-test and post-test. In the sixth and seventh sections of Study 3, in which follow-up tests were also examined, the Time IV involved four and three levels respectively.

The presentation of the intervention was staggered. Thus, the pre-test and post-test times for the two groups who received it were different. The five classes of Year 10 students who had the career development “expert” as their facilitator (Expert group), received the intervention between the first two testing times. The wait-listed Control group of five classes who undertook the intervention with regular teachers (Teacher group), did the intervention between the second and third testing times. Therefore, the pre-test and immediate post-test test for the Expert group entailed T1 and T2 testing times, whereas it entailed the T2 and T3 testing times for the Teacher group. The Generic group did not take part in the intervention. Table 7.1 provides a summary of the four tests and two interventions conducted.

Table 7.1

*Study 3 Design of Testing Times, Groups and Intervention Schedule*

| Groups        | Testing Times                |                              |   |  |
|---------------|------------------------------|------------------------------|---|--|
|               | T1<br>(April)                | T2<br>(June)                 | T3<br>(August)                                  | T4<br>(November)                                 |
| Expert group  | pre-test and<br>intervention | post-test                    | follow-up test<br>8 weeks after<br>intervention | follow-up test<br>20 weeks after<br>intervention |
| Teacher group | T1                           | pre-test and<br>intervention | post-test                                       | follow-up test<br>12 weeks after<br>intervention |
| Generic group | T1                           | T2                           | T3  | T4   |

*Note:* All students were surveyed on the same day on each of the four occasions.

There were two between subjects IVs. Gender, with two levels, was employed in all seven analyses. The other between subjects IV, labelled Group, was used in all analyses except the first, which focussed on outcomes for all students who did the intervention. Two levels of the Group IV were used in sections two to seven. However, the particular groups utilized, namely either the Expert group versus the Teacher group, or the matched sample from the Teacher group versus the Generic group, and so on, differed according to the analysis conducted.

The same five dependent variables (DVs) were used for sections one to seven, namely, CM, CDMSE, CI, M and R with the exception of section five in which the R variable was dropped. This DV was not used in the fifth MANOVA because baseline levels of resoluteness toward decision-making were found to differ between the matched sample drawn from the Teacher group and the Generic group students who were the two groups compared in this particular analysis. The final part of Study 3 involved a collation of various sources of supplementary data. Frequency data concerning subjective ratings were aggregated and reported. Content analyses of the reflexive accounts and written responses to some open ended questions were also examined in this final section.

### *Participants*

The students who took part in Study 3 are the same individuals as those described in Study 2 (Chapter 5) since this involved the analysis of data gathered at the first testing time (T1). The reader is referred to the Participants section of Chapter 5 for details about the entire cohort of Year 10 students who took part in Study 3. A breakdown of the demographic information for the two experimental groups of participants who received the intervention is provided in Table 7.2. Chi square analyses of these data revealed no significant differences between the Expert group and the Teacher group at T1 on any of these demographic variables.

Table 7.2

*Demographic Information at Time 1 for the Expert and Teacher Groups*

|                                       |               | Expert group   | Teacher group  |
|---------------------------------------|---------------|----------------|----------------|
|                                       |               | <i>N</i> = 134 | <i>N</i> = 118 |
| Age                                   | <i>M</i>      | 14.50          | 14.50          |
|                                       | <i>SD</i>     | .54            | .52            |
| Gender                                | Female        | 77 (49%)       | 78 (51%)       |
|                                       | Male          | 70 (58%)       | 50 (42%)       |
| Part-Time Work Experience             | Yes           | 57 (54%)       | 47 (47%)       |
|                                       | No            | 80 (53%)       | 71 (47%)       |
| School Achievement Level <sup>1</sup> | SA            | 84 (57%)       | 73 (43%)       |
|                                       | HA            | 52 (49%)       | 55 (51%)       |
| Mother's Education <sup>2</sup>       | PS/10         | 54 (49%)       | 57 (51%)       |
|                                       | 12            | 35 (57%)       | 27 (43%)       |
|                                       | TAFE/UNI      | 32 (53%)       | 28 (47%)       |
| Father's Education <sup>2</sup>       | PS/10         | 49 (45%)       | 59 (55%)       |
|                                       | 12            | 39 (59%)       | 27 (41%)       |
|                                       | TAFE/UNI      | 25 (57%)       | 20 (44%)       |
| Employment Status <sup>3</sup>        | 0             | 81 (55%)       | 77 (45%)       |
|                                       | 1             | 39 (53%)       | 34 (47%)       |
|                                       | 2             | 10 (50%)       | 10 (50%)       |
|                                       | 3             | 7 (50%)        | 7 (50%)        |
| Performance Goals                     | Specified     | 112 (53%)      | 101 (47%)      |
|                                       | Not Specified | 23 (58%)       | 17 (43%)       |

*Note*<sup>1</sup>: SA = satisfactory or less achievement, HA = high achievement.

*Note*<sup>2</sup>: PS/10 = primary school or Year 10 level of education, 12 = Year 12, TAFE/UNI = TAFE or similar tertiary course or a university level of education.

*Note*<sup>3</sup>: 0 = no parent unemployed, 1 = mother, 2 = father, 3 = both parents unemployed.

The Generic group was relatively small compared to the Expert and Teacher groups. Therefore, a subset of Teacher group participants was drawn for the fifth analysis in Study 3, whereby the effects of the theoretically based intervention were compared with the school based vocational course that Generic group students underwent. The reader is referred to section five of this chapter for specific information about the Generic group participants and the subset of Teacher group students who were employed for that particular analysis.

In terms of how students were assigned to the three groups involved, random allocation was possible for the two groups who undertook the intervention (Expert

group and Teacher group) and not for those who formed the vocational education group (Generic group). The students who were given the intervention were members of 10 heterogeneous class groups. These classes were formed at the commencement of the school year and students were assigned to classes randomly without streaming. That is, students were not grouped according to particular ability levels. Hence, these 10 classes of students were able to be randomly assigned to program delivery groups. Five classes were randomly chosen to do the intervention first, with the researcher as “expert” facilitator (Expert group), while the remaining five classes did the intervention later with teachers as their facilitators (Teacher group).

Two other class groups of Year 10 students formed the third group of students (Generic group), who did not receive the intervention. These two classes were enrolled in a school based vocational program. Students in these two class groups had specifically chosen this course at the beginning of the year so that they could be given special learning experiences throughout the year with a career focus. As such, students who formed the group who did not receive the intervention (Generic group) were not randomly allocated to this condition.

#### *Participant Attrition*

The composition and numbers of students at each of the subsequent testing times were examined via attrition analysis to ensure there were no differences between those who were present for all testing times and those who did not complete all four surveys. Attrition was examined to ascertain the level of confidence with which results of the longitudinal analyses could be viewed. Initially, students who were present for the first two waves of testing (T1 and T2) were compared with those who attended at T1 but not T2. The first chi square analysis,  $\chi^2(1) = .13, p > .05$ , illustrated that there was a similar proportion of drop outs from T1 to T2 in the experimental (i.e., Expert group) and wait-listed Control groups (i.e., Teacher group). However, when the generic vocational group (i.e., Generic group;  $N = 42$ ) was included, this was not found to be the case with  $\chi^2(2) = 7.75, p < .05$ . Inspection of expected and observed frequencies revealed the only marked discrepancy was for the Generic vocational education group members who were absent for the second test (7.9 expected & 14 observed). As the Generic group was relatively small, this was not deemed of major concern.

Following this, attrition from T1 to T2 for the Expert and Teacher groups combined was examined in relation to demographic and dependent variables at T1 to see if there were any differences between those who did and those who did not attend both testing sessions. Chi square analyses of demographic variables demonstrated that there were no differences in terms of parents' education and employment status, or students' perceptions of their school achievement levels and degree of certainty for future plans. However, dropouts and non-dropouts differed in terms of gender,  $\chi^2(1) = 9.12, p < .01$ , with boys being more likely to drop out at T2 than girls. No differences between dropouts and non-dropouts were found on the five main dependent variables (i.e., CM, CI, CDMSE, M and R) when examined via *t* tests with a Bonferroni correction of .01.

Attrition rates at T3 were also examined by comparing T1 data for participants who were present for the first three tests with those present for T1 and T2 but absent at T3. A chi square analysis,  $\chi^2(2) = 1.57, p > .05$ , demonstrated there was a similar proportion in each of the three research groups. Dropouts and non-dropouts at T3 from the Expert and Teacher groups were examined in relation to the six demographic (i.e., gender, parents' employment status, parents' education, students' work experience, school achievement and certainty for future plans) and five dependent variables (i.e., CM, CC, CDMSE, M and R). There were no pre-intervention differences between those who did and those who did not attend the third testing session on any of these variables.

Finally, attrition at T4 was investigated. Chi square analysis on the baseline data demonstrated that there was a similar proportion of participants who attended all four testing sessions and those who attended at T1, T2 and T3 but not T4 in each of the three research groups. There were no differences between dropouts and non-dropouts at T4 on the demographic and dependent variables investigated in the above T2 and T3 attrition analyses.

Manipulation checks were contemplated to determine whether the experience of the intervention was similar for participants in the two main research groups (i.e., Expert group and Teacher group) whether they attended testing sessions or not. In the case of the Expert group who were given the intervention between T1 and T2, this comparison involved those present for T1, T2 and T3 compared with those present for T1, T2 but not T3. Given that only 8 of the 114 students in this group dropped out at T3 this analysis was not performed. Likewise, for the wait-listed

Control/Teacher group who undertook the intervention between T2 and T3, the manipulation check on those present for T2, T3 and T4 compared with those present at T2 and T3 but not at T4 was not conducted since only 7 of the 88 students dropped out. Indeed, there was a high response rate overall to the four testing sessions. T1 to T2 suffered most with 18% of the entire sample dropping out, followed by 9.5% from T2 to T3 and 12% from T3 to T4.

Findings of the longitudinal analyses discussed in this chapter may thus be regarded with a satisfactory level of confidence. Students who completed all four surveys were found to be generally similar to those who missed testing sessions and longitudinal results are deemed unlikely to be biased by the relatively small number of participants who dropped out of the study at each of the testing times.

### *Procedure*

All four tests were administered in the same manner as that described for the pre-test (T1) in Chapter 5. There was a lapse of approximately eight weeks between the first administration of the survey in April and the second test in June. This was followed by another eight week lapse before the follow-up test in August. The final survey was administered 12 weeks later in November, which provided the long term data. This last survey was administered 20 weeks after the T2 test.

Since the survey was administered to the Year 10 participants at these four testing times during 2000, the instruments within it were presented in a configuration resembling a balanced Latin square design in an attempt to reduce order and sequence effects (see Appendix G). Hence, on the whole, instruments were not preceded or followed by the same instrument in any of the four test batteries to counter sequence effects. Additionally, no instrument was presented in the same position in any of the surveys to ensure participants completed the instruments in counterbalanced order.

### *Instruments*

The instruments used in all four surveys were identical and thus, the reader is referred to Chapter 5, which outlines the T1 survey. To recapitulate, the five main instruments were the Career Maturity Inventory-Revised (CMI-R; Crites & Savickas,

1995), the Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1976), the Career Decision-Making Self-Efficacy-Short Form scale (CDMSE-SF; Betz, Klein, & Taylor, 1996), and the two factors (M and R) generated from the Flinders Adolescent Decision-Making Questionnaire (FADMQ; Mann, 1988). Demographic questions made up a sixth section of the survey.

## Results

Initially, extensive data screening of the T1, T2, T3 and T4 survey data for all three groups of students was undertaken to detect problems with skew and kurtosis and to locate any data input errors. For example, if the standard error of skew was greater than 2.5, extreme data points were investigated separately and removed where appropriate. No transformations were required to meet the assumption of normality once this screening process was complete. The investigation of homogeneity of variance was undertaken using the  $F_{\max}$  test, as recommended by Tabachnick and Fidell (1997), revealing no violations to this assumption. Scatter diagrams for each bivariate pair of the five dependent variables were also inspected and demonstrated no violations concerning linearity.

Some maneuvering of the data set was necessary to construct a file to allow the various longitudinal examinations involved in Study 3. This arrangement of the data file is presented in Table 7.3 to illustrate. The pre-test to post-test comparison between males and females in the first section, and the pre-test to post-test comparison between the Expert and Teacher groups in the second section, required the T2 data for Teacher group to be aligned below the T1 data for Expert group since T2 was the pre-test for Teacher group. Subsequently, the T3 data for the Teacher group was aligned below the T2 data for Expert group to line up the post-tests for the two groups and so on.

Likewise, to allow comparisons between the Expert group and the wait-listed Control group (section 3), as well as between the Teacher group and the wait-list Control group (section 4), the Teacher group data recorded for T1 and T2, were entered below and labelled as the Control group for the purpose of these comparisons. Finally, a matched sample of Teacher group participants was drawn from the Teacher group data so that the pre-test to post-test comparison with the Generic group students could be achieved.

Table 7.3

*Data File Configuration for Study 3*

| Groups                                | Testing Times   |                  |                                 |                              |
|---------------------------------------|-----------------|------------------|---------------------------------|------------------------------|
|                                       | <i>Pre-Test</i> | <i>Post-Test</i> | <i>8/12 week*<br/>Follow-Up</i> | <i>20 week<br/>Follow-Up</i> |
| Expert group                          | T1              | T2               | T3                              | T4                           |
| Teacher group                         | T2              | T3               | T4                              |                              |
| Control group<br>(Teacher group data) | T1              | T2               |                                 |                              |
| Generic group                         | T1              | T2               |                                 |                              |

*Note:* \*There were 8 weeks between T2 and T3 and 12 weeks between T3 and T4 testing times. Hence, the first follow-up for the Expert group was an 8 week follow-up, whereas the follow-up test for the Teacher group was a 12 week follow-up.

The particular sets of data analysed were further scrutinized to assess that assumptions were met for each of the seven MANOVAs conducted. These specific assessments were conducted in a similar fashion to the initial screening process described above. They found the assumptions of normality, homogeneity of variance and linearity being met in all cases. Equal variance-covariance matrices were observed for the dependent measures and multicollinearity was not found to be problematic. Mahalanobis distance scores were obtained by conducting a regression analysis with case numbers as the DV and the five dependent measures as the IVs in order to assess multivariate outliers. Using a chi square statistic of .001 with four degrees of freedom, cut-off values were obtained and revealed five multivariate outliers. These five students' data were removed one by one and analyses were run with and without their scores revealing no effect on the results. All five cases were thus retained.

Prior to each of the MANOVAs conducted to address the hypotheses in Study 3, analyses of variance (ANOVAs) were run to check that the particular groups being compared in each case were not significantly different from one another on any of the five DVs at the baseline testing times. For example, for the first section, the pre-test data for the two experimental groups combined (i.e., Expert and Teacher groups) were scrutinized with gender as the between subjects factor. This established that males and females did not differ on any of the DVs prior to students undertaking the intervention across the two groups.

Likewise, a factorial ANOVA was conducted on the pre-test data with the mode of delivery group as the first factor (i.e., Expert and Teacher), and gender as the second factor, prior to the second MANOVA. No significant differences on the DVs were found showing that these two groups were sufficiently similar when they were pre-tested, for post-test comparisons to proceed. Baseline checks were repeated in this manner for the remaining five analyses revealing no differences between each of the subsequent groups under investigation apart from the groups compared for section five, who were found to differ on levels of resolute decision coping patterns at T1. The levels of R were significantly lower for the sample drawn from the Teacher group than for the Generic group students at the first testing time. Consequently, this DV was dropped from the fifth MANOVA.

In order to comply with the recommendations laid down by the Task Force on Statistical Inference (Wilkinson, 1999), confidence intervals are presented where appropriate rather than standard deviations. The latter are included in the Appendices, however, for further reference. Moreover, “effect sizes for primary outcomes” (p. 704) are also provided since this was another recommendation put forward by the task force appointed by the American Psychological Association. Cohen’s *d* (1988) measures were chosen as the most suitable standardized mean difference indicator to allow comparison with previous research in this field of endeavour (e.g., Oliver & Spokane, 1988). Once the results of each of the MANOVAs were examined thoroughly, and the presence of significant mean differences delineated, *d* statistics were calculated to explicate the practical importance of the key findings. These were “computed by dividing the difference of the two means by the pooled standard deviation” (p. 587) as described by Fidler and Thompson (2001).

#### *Section One: Outcomes for Expert and Teacher Groups Combined*

Data for the entire cohort of students who were given the intervention, regardless of whether they were taught by the career development “expert” or by teachers, were collated to compare the pre-test and post-test results of males and females overall. Table 7.4 presents means and 95% confidence intervals for the five DVs according to gender (see Appendix H for standard deviations).

Table 7.4

*Gender Summary Statistics for the Five Dependent Variables for Groups 1 and 2 Combined*

| Dependent Variables | Testing Time | Females<br><i>n</i> = 115 |             |             | Males<br><i>n</i> = 82  |             |             | Total<br><i>N</i> = 197 |             |             |
|---------------------|--------------|---------------------------|-------------|-------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                     |              | 95% Confidence Interval   |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval |             |             |
|                     |              | <i>M</i>                  | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound |
|                     |              | CMI-R Attitude (CM)       | Pre-Test    | 9.70        | 9.11                    | 10.30       | 10.04       | 9.34                    | 10.74       | 9.87        |
|                     | Post-Test    | 10.83                     | 10.22       | 11.43       | 9.84                    | 9.13        | 10.56       | 10.33                   | 9.87        | 10.80       |
| CDMSE               | Pre-Test     | 90.01                     | 87.28       | 92.74       | 90.23                   | 87.00       | 93.46       | 90.12                   | 88.00       | 92.23       |
|                     | Post-Test    | 91.55                     | 88.98       | 94.12       | 89.83                   | 86.79       | 92.87       | 90.69                   | 88.70       | 92.68       |
| CDS Indecision (CI) | Pre-Test     | 32.10                     | 30.44       | 33.77       | 32.71                   | 30.74       | 34.68       | 32.40                   | 31.12       | 33.70       |
|                     | Post-Test    | 30.52                     | 28.74       | 32.30       | 34.89                   | 32.78       | 37.00       | 32.70                   | 31.33       | 34.09       |
| FADMQ               | Pre-Test     | 3.79                      | 32.25       | 4.33        | 4.34                    | 3.70        | 4.98        | 4.07                    | 3.65        | 4.49        |
| Maladaption (M)     | Post-Test    | 3.50                      | 2.99        | 4.02        | 4.49                    | 3.87        | 5.10        | 4.00                    | 3.60        | 4.40        |
| FADMQ               | Pre-Test     | 11.91                     | 11.25       | 12.58       | 12.59                   | 11.80       | 13.38       | 12.25                   | 11.73       | 12.77       |
| Resoluteness(R)     | Post-Test    | 11.94                     | 11.33       | 12.55       | 12.48                   | 11.76       | 13.19       | 12.21                   | 11.74       | 12.68       |

To determine if the intervention had an effect for all the students who undertook it, and to see if this effect differed between the males and females in the whole sample, a 2 (time; pre-test and post-test) X 2 (gender) mixed repeated measures MANOVA was conducted. This analysis produced a significant time by gender multivariate effect:  $F(1, 195) = 2.32; p = .045$ . The univariate tests found this interaction involved two of the DVs, namely, CM:  $F(1, 195) = 9.17; p = .003$  and CI:  $F(1, 195) = 7.19; p = .014$ . Figures 7.1 and 7.2 provide graphical illustrations of these disordinal interactions.

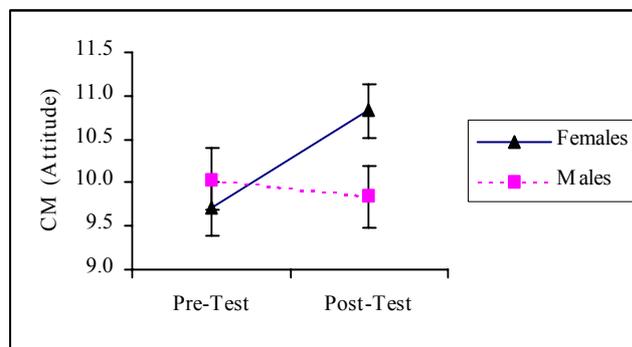


Figure 7.1. Mean CM scores for Males and Females Pre-Test to Post-Test

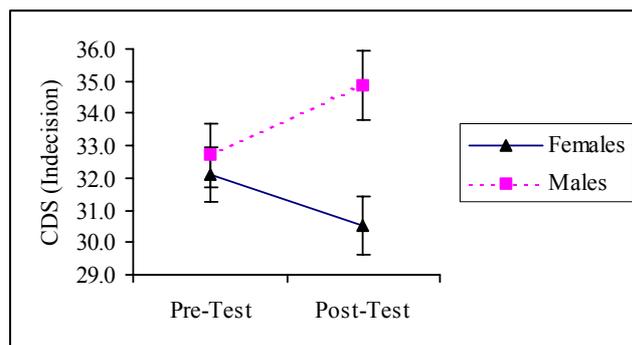


Figure 7.2. Mean CI scores for Males and Females Pre-Test to Post-Test

Inspection of the means and 95% confidence intervals for CM (see Table 7.4) showed that, while males' attitudes toward career decisions remained relatively constant before and after the intervention, females' level of CM (Attitude) was enhanced as a result of the course. Cohen's  $d$  (1988) for this effect was .35 for

females' CM between the two times. Simple effects analysis confirmed that females reported more mature attitudes toward career decision-making than the males immediately after the course:  $F(1, 204) = 5.32; p = .022$ . This effect was computed at  $d = .3$ .

The means and 95% confidence intervals for CI (see Table 7.4) show that males and females experienced reasonably similar levels of indecision before and after the intervention. Simple effects analysis confirmed that females experienced less indecision than males at the post-test:  $F(1, 197) = 1.13; p = .002$ . The effect size for this mean difference was  $d = .45$ .

There were two between subjects effects for gender. The first was for CI:  $F(1, 195) = 4.90; p = .028$  and the second was for M:  $F(1, 195) = 4.41; p = .037$ . On average, males reported more career indecision and more maladaptive decision coping patterns than females.

It should be noted that disordinal interaction effects invalidate interpretation of the main effect for time (Hair, Anderson, Tatham, & Black, 1995). Hence, support or otherwise for Hypothesis 1.1 could not be clearly determined. However, since the results showed that CM and CI levels from pre-test to post-test were dependent on the gender of participants, these findings lend partial support to Hypothesis 1.2, which predicted there would be a different pattern of results according to gender. Students' level of CDMSE and R were not found to display any significant effects for this analysis.

### *Section Two: Comparison between Expert versus Teacher Delivery of Intervention*

In order to establish whether the intervention had a different effect according to the mode of delivery, a 2 (time; pre-test & post-test) X 2 (group; Expert group & Teacher group) X 2 (gender) mixed repeated measures MANOVA was conducted. Discrepancies between pre-test and post-test outcomes for students who had the "expert" facilitator (Expert group) were compared to those who were given the intervention by regular teachers (Teacher group). Gender was included as the second between groups variable since it was established in the previous analysis that results differed between males and females. Table 7.5 presents means and 95% confidence intervals for the Expert and Teacher group's scores on the five DVs according to gender (see Appendix I for standard deviations).

Table 7.5

*Summary Statistics for Males and Females in the Expert and Teacher Groups*

| Dependent Variables    | Gender | Expert Group<br><i>n</i> = 110 |             |             |                         |             |             | Teacher Group<br><i>n</i> = 87 |             |             |                         |             |             |
|------------------------|--------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                        |        | Pre-Test                       |             |             | Post-Test               |             |             | Pre-Test                       |             |             | Post-Test               |             |             |
|                        |        | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             |
|                        |        | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound |
| CMI-R Attitude (CM)    | F      | 9.18                           | 8.37        | 10.00       | 10.85                   | 10.05       | 11.65       | 10.27                          | 9.42        | 11.12       | 10.80                   | 9.96        | 11.64       |
|                        | M      | 9.86                           | 8.97        | 10.75       | 8.60                    | 7.72        | 9.48        | 10.31                          | 9.19        | 11.43       | 11.78                   | 10.68       | 12.88       |
|                        | Total  | 9.52                           | 8.92        | 10.13       | 9.73                    | 9.13        | 10.32       | 10.29                          | 9.59        | 11.00       | 11.29                   | 10.60       | 11.98       |
| CDMSE                  | F      | 90.20                          | 86.42       | 93.98       | 91.88                   | 88.32       | 95.44       | 89.80                          | 85.86       | 93.75       | 91.18                   | 87.46       | 94.90       |
|                        | M      | 88.50                          | 84.36       | 92.64       | 88.38                   | 84.48       | 92.28       | 92.94                          | 87.77       | 98.11       | 92.09                   | 87.22       | 96.97       |
|                        | Total  | 89.35                          | 86.55       | 92.15       | 90.13                   | 87.49       | 92.77       | 91.37                          | 88.12       | 94.62       | 91.64                   | 88.57       | 94.70       |
| CDS Indecision (CI)    | F      | 32.12                          | 29.81       | 34.43       | 32.28                   | 29.89       | 34.67       | 32.09                          | 29.68       | 34.50       | 28.60                   | 26.10       | 31.10       |
|                        | M      | 31.76                          | 29.23       | 34.29       | 37.48                   | 34.86       | 40.10       | 34.19                          | 31.03       | 37.35       | 30.84                   | 27.57       | 34.12       |
|                        | Total  | 31.94                          | 30.23       | 33.65       | 34.88                   | 33.11       | 36.65       | 33.14                          | 31.15       | 35.13       | 29.72                   | 27.66       | 31.78       |
| FADMQ Maladaption (M)  | F      | 3.93                           | 3.19        | 4.68        | 3.53                    | 2.82        | 4.25        | 3.64                           | 2.86        | 4.42        | 3.47                    | 2.73        | 4.22        |
|                        | M      | 3.82                           | 3.01        | 4.63        | 4.96                    | 4.18        | 5.74        | 5.16                           | 4.14        | 6.17        | 3.75                    | 2.77        | 4.73        |
|                        | Total  | 3.88                           | 3.33        | 4.43        | 4.25                    | 3.72        | 4.78        | 4.40                           | 3.76        | 5.04        | 3.61                    | 2.99        | 4.23        |
| FADMQ Resoluteness (R) | F      | 11.67                          | 10.74       | 12.59       | 12.08                   | 11.24       | 12.92       | 12.18                          | 11.21       | 13.15       | 11.78                   | 10.90       | 12.66       |
|                        | M      | 12.50                          | 11.48       | 13.52       | 12.70                   | 11.78       | 13.62       | 12.72                          | 11.45       | 13.99       | 12.13                   | 10.97       | 13.28       |
|                        | Total  | 12.08                          | 11.40       | 12.77       | 12.39                   | 11.77       | 13.02       | 12.45                          | 11.65       | 13.25       | 11.95                   | 11.23       | 12.68       |

A significant three way multivariate interaction was obtained:  $F(1, 193) = 7.04$ ;  $p < .001$ . Univariate tests found this comprised CM:  $F(1, 193) = 21.19$ ;  $p < .001$  and M:  $F(1, 193) = 12.78$ ;  $p < .001$ . Figures 7.3 and 7.4 provide graphical illustrations of these time by group by gender interactions for CM and M respectively.

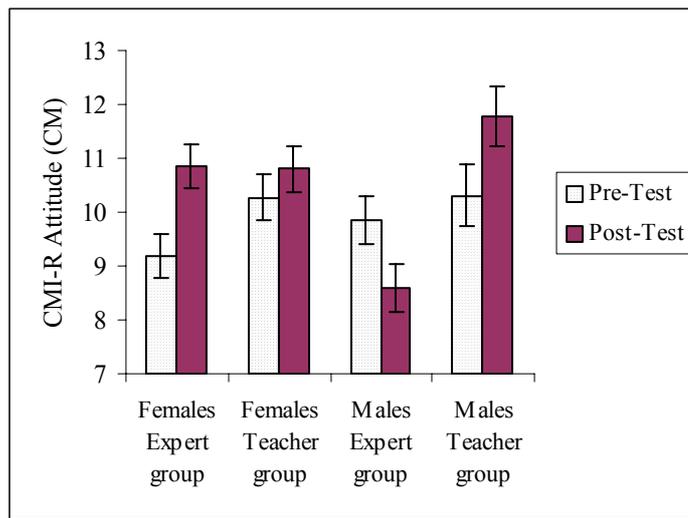


Figure 7.3. Mean CM scores for Females and Males in the Expert and Teacher Groups Pre-Test to Post-Test

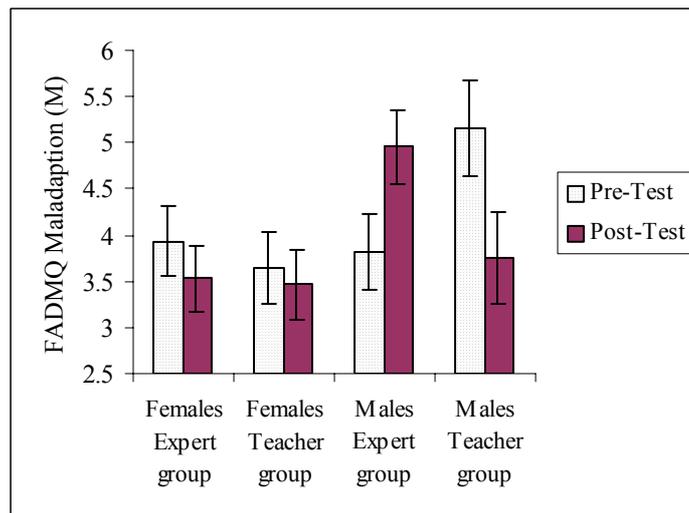


Figure 7.4. Mean M scores for Females and Males in the Expert and Teacher Groups Pre-Test to Post-Test

Simple effects analysis revealed females overall benefited by the intervention in terms of CM:  $F(1, 204) = 17.01; p < .001$ . A significant difference for the CM of males overall from the pre-test to the post-test was not obtained. Further analysis was conducted on the females and males separately. This revealed females in the Teacher group did not make significant gains in CM from the pre-test to the post-test but the females in the Expert group did improve in maturity following the intervention:  $F(1, 115) = 27.79; p < .001$ . The effect for this improvement was calculated at  $d = .55$ . Males in the Teacher group made significant gains in CM from the pre-test to the post-test:  $F(1, 87) = 4.57; p = .035$ . Whereas, males in the Expert group experienced significantly lower levels of CM after the intervention:  $F(1, 87) = 7.09; p = .009$ . The  $d$  statistics for these latter two effects were .50 and .39 respectively.

Levels of M from the pre-test to the post-test were not found to differ significantly for females or males across both groups as evidenced by simple effects analysis. The divergent pattern of results concerning levels of maladaptation displayed by males in the two groups may have offset this finding though (see Figure 7.4). A further simple effects analysis inspecting just the males' scores on M from the pre-test to the post-test revealed significantly more maladaptive decision coping patterns after the intervention were reported by males in the Expert group:  $F(1, 88) = 7.99; p = .007$ . This effect was found to be  $d = .44$ . Conversely, there was a significant decrease in M from the pre-test to the post-test for the males in the Teacher group:  $F(1, 88) = 8.38; p = .005$ . This difference in means produced a standardized effect of  $d = .47$ .

Results of the MANOVA also revealed a significant time by group multivariate interaction:  $F(1, 193) = 5.85; p < .001$ . According to the univariate tests, this involved CI:  $F(1, 193) = 18.72; p < .001$  (see Figure 7.5). The 95% confidence intervals for the entire Expert group's level of indecision demonstrated very little overlap. They ranged from 30.23 to 33.65 for the pre-test and from 33.11 to 36.65 for the post-test. This indicates that the Expert group participants overall experienced more indecision after the intervention than before. An effect of  $d = .33$  was calculated for the heightened level of indecision in this group. The confidence intervals for the Teacher group were also found to overlap by less than 20%. These ranged from 31.15 to 35.13 for the pre-test and from 27.66 to 31.78 for the post-test. Participants in the Teacher group reported less CI following the intervention than

they had at the pre-test ( $d = .35$ ). The 95% confidence intervals also indicate that the Expert group participants reported more CI at the post-test compared to their counterparts in the Teacher group at the same time. An effect of  $d = .54$  was observed in this instance.

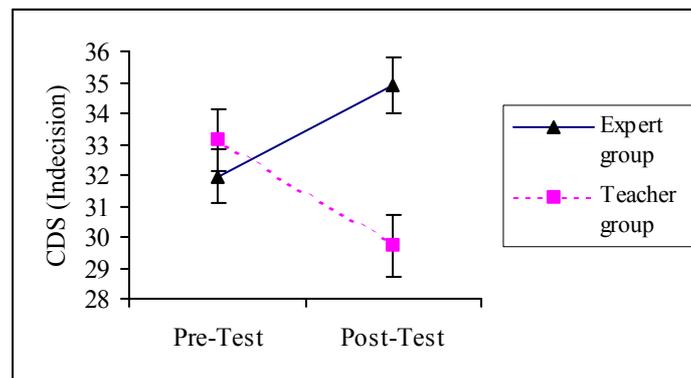


Figure 7.5. Mean CI scores for Expert group and Teacher group Pre-Test to Post-Test

There was no significant multivariate interaction for time by gender and no main effect for time. There was, however, a between subjects effect for group involving CM:  $F(1, 193) = 7.90$ ;  $p = .005$ . Inspection of the means revealed that on average, participants in the Expert group were less mature in their attitudes toward career decision-making than those in the Teacher group. There were two between subjects effects for gender. They were for CI:  $F(1, 193) = 4.07$ ;  $p = .045$  and for M:  $F(1, 193) = 4.37$ ;  $p = .038$ . Overall, males reported higher levels of indecision about their careers than females and the males also exhibited more maladaptive decision coping patterns than the females in the present sample.

The results for section two of Study 3 are supportive of the second hypothesis since the intervention appears to have had a different effect according to mode of delivery. This is complicated by the discrepancies between males and females, however. When considering the females, it appears that career development is enhanced by the intervention no matter whether facilitated by an “expert” or a regular classroom teacher. Males, on the other hand, appear to fare better with teachers facilitating their career education intervention than when they experience an “expert” mode of delivery. These tentative conclusions are with regard to three of the

five DVs, though, as CDMSE and R were not found to display any significant effects for this analysis.

### *Section Three: Comparison between Expert Group and Controls*

A pre-test to post-test comparison was made between the participants who were taught the intervention by an “expert” facilitator (Expert group) between the first two testing times (T1 & T2) and the Control group who were wait-listed for the intervention in this part of Study 3. The wait-listed Control group was the Teacher group who were not given the intervention between the first two testing times. These students did the intervention between the second and third testing times (T2 & T3) and so were labelled the Control group for this analysis (see Table 7.3). A 2 (time; T1 & T2) X 2 (group; Expert group & Control group), X 2 (gender) mixed repeated measures MANOVA was conducted. Table 7.6 presents means and 95% confidence intervals for the Expert and Control groups’ scores on the five DVs according to gender (see Appendix J for standard deviations).

Table 7.6

*Summary Statistics for Males and Females in the Expert and Control Groups*

| Dependent Variables     | Gender | Expert Group<br><i>n</i> = 110 |             |             |                         |             |             | Control Group<br><i>n</i> = 94 |             |             |                         |             |             |
|-------------------------|--------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                         |        | Pre-Test                       |             |             | Post-Test               |             |             | Pre-Test                       |             |             | Post-Test               |             |             |
|                         |        | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             |
|                         |        | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound |
|                         |        | CMI-R Attitude (CM)            | F           | 9.18        | 8.42                    | 9.95        | 10.85       | 10.01                          | 11.70       | 9.64        | 8.87                    | 10.41       | 10.46       |
|                         | M      | 9.86                           | 9.02        | 10.70       | 8.60                    | 7.67        | 9.53        | 9.51                           | 8.52        | 10.51       | 10.20                   | 9.10        | 11.31       |
|                         | Total  | 9.52                           | 8.96        | 10.09       | 9.73                    | 9.10        | 10.35       | 9.58                           | 8.95        | 10.21       | 10.33                   | 9.63        | 11.03       |
| CDMSE                   | F      | 90.20                          | 86.36       | 94.05       | 91.88                   | 88.24       | 95.53       | 87.61                          | 83.73       | 91.49       | 91.22                   | 87.55       | 94.89       |
|                         | M      | 88.50                          | 84.29       | 92.71       | 88.38                   | 84.39       | 92.37       | 90.37                          | 85.34       | 95.41       | 91.37                   | 86.60       | 96.14       |
|                         | Total  | 89.35                          | 86.50       | 92.20       | 90.13                   | 87.43       | 92.83       | 88.99                          | 85.81       | 92.17       | 91.30                   | 88.29       | 94.31       |
| CDS Indecision (CI)     | F      | 32.12                          | 29.87       | 34.37       | 32.28                   | 29.85       | 34.72       | 32.63                          | 30.36       | 34.90       | 31.81                   | 29.36       | 34.27       |
|                         | M      | 31.76                          | 29.30       | 34.22       | 37.48                   | 34.81       | 40.15       | 32.43                          | 29.48       | 35.37       | 34.40                   | 31.21       | 37.59       |
|                         | Total  | 31.94                          | 30.27       | 33.61       | 34.88                   | 33.07       | 36.69       | 32.53                          | 30.67       | 34.39       | 33.11                   | 31.09       | 35.12       |
| FADMQ Maladaptation (M) | F      | 3.93                           | 3.25        | 4.62        | 3.53                    | 2.81        | 4.25        | 3.14                           | 2.45        | 3.82        | 3.51                    | 2.78        | 4.24        |
|                         | M      | 3.82                           | 3.07        | 4.57        | 4.96                    | 4.17        | 5.75        | 3.97                           | 3.08        | 4.87        | 4.77                    | 3.83        | 5.71        |
|                         | Total  | 3.88                           | 3.37        | 4.38        | 4.25                    | 3.71        | 4.78        | 3.55                           | 2.99        | 4.12        | 4.14                    | 3.55        | 4.79        |
| FADMQ Resoluteness (R)  | F      | 11.67                          | 10.72       | 12.62       | 12.08                   | 11.25       | 12.92       | 11.36                          | 10.40       | 12.32       | 12.36                   | 11.52       | 13.20       |
|                         | M      | 12.50                          | 11.46       | 13.54       | 12.70                   | 11.79       | 13.61       | 11.86                          | 10.61       | 13.10       | 12.83                   | 11.74       | 13.92       |
|                         | Total  | 12.08                          | 11.38       | 12.79       | 12.39                   | 11.77       | 13.01       | 11.61                          | 10.82       | 12.39       | 12.59                   | 11.90       | 13.28       |

A significant three way multivariate interaction was obtained:  $F(1, 200) = 2.47$ ;  $p = .034$  with the univariate tests revealing this involved CM:  $F(1, 200) = 1.39$ ;  $p = .001$ . Figure 7.6 illustrates this significant interaction. Simple effects analysis showed females in both groups exhibited improved levels of CM at the second testing time:  $F(1, 120) = 7.34$ ;  $p = .008$  for the Control group and  $F(1, 120) = 24.19$ ;  $p < .001$  for the Expert group females. The Control group effect size for this increase in CM was  $d = .25$  and the Expert group effect size was  $d = .55$ . Inspection of the 95% confidence intervals (see Table 7.6) demonstrate that greater gains were made by the females in the Expert group. Indeed, females' improved scores on CM from the pre-test to the post-test in the Control group may portray natural maturation without intervention. Although the males in the Control group did not achieve a significant increase in CM from the pre-test to the post-test, the slight increase from the first to the second testing times they exhibited (see Figure 7.6) may also represent natural maturation without intervention. Males in the Expert group were found to exhibit significantly less maturity at the post-test compared to their pre-test scores:  $F(1, 90) = 7.10$ ;  $p = .015$  ( $d = .39$ ).

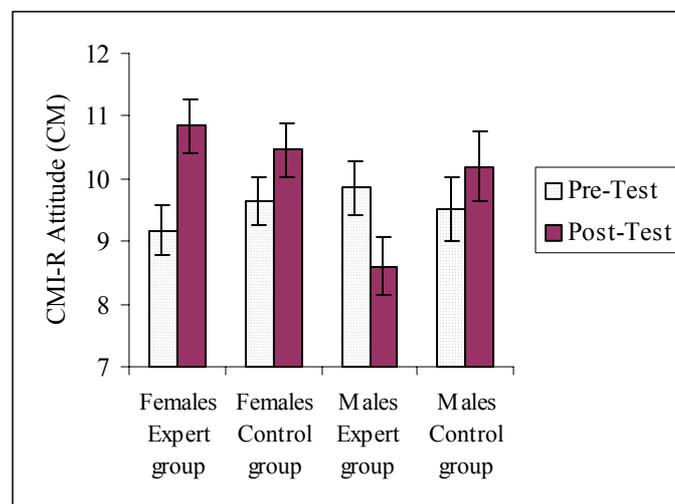


Figure 7.6. Mean CM scores for Females and Males in the Expert and Control Groups Pre-Test to Post-Test

No significant time by group multivariate interaction was found although there was a significant multivariate effect for time by gender:  $F(1, 200) = 3.78; p = .003$ . The univariate tests showed this involved CI:  $F(1, 200) = 8.47; p = .004$  (see Figure 7.7) and M:  $F(1, 200) = 7.51; p = .011$  (see Figure 7.8). Males overall experienced more indecision and reported more maladaptive decision coping patterns than females at the second testing time. This was evidenced by the 95% confidence intervals, which ranged from 30.32 to 33.78 for females' CI at the post-test compared with males, which ranged from 33.87 to 38.02. Likewise, the 95% confidence intervals for females' level of M at the post-test ranged from 3.01 to 4.03, whereas the males' confidence interval for M at the post-test ranged from 4.25 to 5.48.

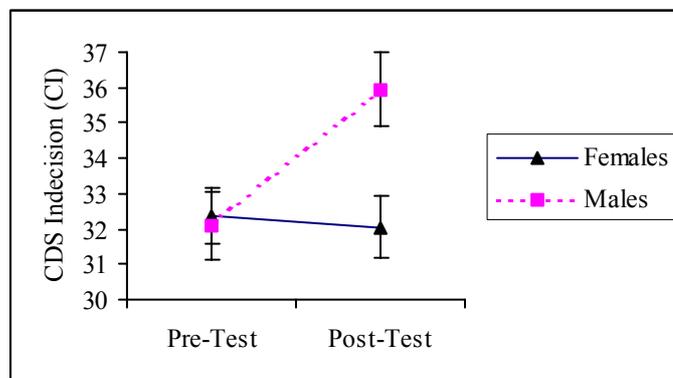


Figure 7.7. Mean CI scores for Females and Males Pre-Test to Post-Test

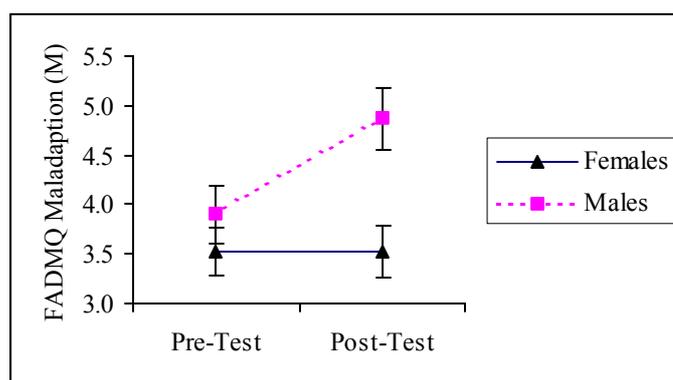


Figure 7.8. Mean M scores for Females and Males Pre-Test to Post-Test

There was also a significant multivariate effect for time:  $F(1, 200) = 7.42; p < .001$ . The univariate tests showed this involved the DV measuring the level of

resoluteness (R) in participants' approach to decision-making:  $F(1, 200) = 7.20$ ;  $p = .008$ . Overall, levels of R increased from the first to the second testing times. There was one significant effect for Gender found for M:  $F(1, 200) = 7.12$ ;  $p = .014$ . Regardless of whether students were exposed to the career education intervention or not, males reported more maladaptive decision coping patterns than females.

The third hypothesis predicted that students who received the theoretically based career education intervention with the career development "expert" as facilitator (Expert group), would display more improvement in terms of CM, CDMSE, CI, M and R from pre-test to post-test than the Control group. This was only partially supported. The intervention, when facilitated by the career development "expert," had a positive effect on females' attitudes toward career decision-making in this particular sample of Year 10 students. Again, the differential way in which the males in the Expert group responded to the intervention tended to cloud the results. Although the females in the experimental group surpassed the degree of maturation demonstrated by the Control group, the males in the Expert group experienced reduced CM compared to their counterparts in the wait-listed Control group. No other DVs gave clear indications that the participants in the "expert" intervention group were at any advantage or indeed, experienced any disadvantage in comparison to the Control group.

#### *Section Four: Comparison between Teacher Group and Controls*

The impact of the career decision-making education intervention, when facilitated by regular classroom teachers, was examined in the fourth part of Study 3. In this instance, the Teacher group students' scores on the five DVs before and after they undertook the intervention (i.e., at T2 and T3) were compared with the same group of students' scores when they were wait-listed for the course between the T1 and T2 testing times (see Table 7.3). As such, the Teacher group acted as their own controls before they were given the intervention. A 2 (time; T3 to T4 and T1 to T2) X 2 (group; Teacher group & Control group) X 2 (gender) mixed repeated measures MANOVA was conducted. Table 7.7 presents means and 95% confidence intervals for the Teacher and Control groups' scores on the five DVs according to gender (see Appendix K for standard deviations).

Table 7.7

*Summary Statistics for Males and Females in the Teacher and Control Groups*

| Dependent Variables     | Gender | Teacher Group<br><i>n</i> = 87 |             |             |                         |             |             | Control Group<br><i>n</i> = 94 |             |             |                         |             |             |
|-------------------------|--------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                         |        | Pre-Test                       |             |             | Post-Test               |             |             | Pre-Test                       |             |             | Post-Test               |             |             |
|                         |        | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             |
|                         |        | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound |
|                         |        | CMI-R Attitude (CM)            | F           | 10.27       | 9.40                    | 11.15       | 10.80       | 9.96                           | 11.64       | 9.64        | 8.80                    | 10.49       | 10.46       |
|                         | M      | 10.31                          | 9.17        | 11.46       | 11.78                   | 10.68       | 12.88       | 9.51                           | 8.42        | 10.61       | 10.20                   | 9.15        | 11.25       |
|                         | Total  | 10.29                          | 9.57        | 11.01       | 11.29                   | 10.60       | 11.98       | 9.58                           | 8.88        | 10.27       | 10.33                   | 9.67        | 10.99       |
| CDMSE                   | F      | 89.80                          | 85.84       | 93.76       | 91.18                   | 87.44       | 94.93       | 87.61                          | 83.79       | 91.43       | 91.22                   | 87.61       | 94.84       |
|                         | M      | 92.94                          | 87.75       | 98.13       | 92.09                   | 87.19       | 97.00       | 90.37                          | 85.41       | 95.33       | 91.37                   | 86.68       | 96.06       |
|                         | Total  | 91.37                          | 88.11       | 94.63       | 91.64                   | 88.55       | 94.72       | 88.99                          | 85.86       | 92.12       | 91.30                   | 88.33       | 94.26       |
| CDS Indecision (CI)     | F      | 32.09                          | 29.45       | 34.73       | 28.60                   | 26.00       | 31.20       | 32.63                          | 30.08       | 35.18       | 31.81                   | 29.30       | 34.33       |
|                         | M      | 34.19                          | 30.73       | 37.65       | 30.84                   | 27.43       | 34.25       | 32.43                          | 29.12       | 35.74       | 34.40                   | 31.14       | 37.66       |
|                         | Total  | 33.14                          | 30.96       | 35.32       | 29.72                   | 27.58       | 31.87       | 32.53                          | 30.44       | 34.62       | 33.11                   | 31.05       | 35.17       |
| FADMQ Maladaptation (M) | F      | 3.64                           | 2.88        | 4.40        | 3.47                    | 2.72        | 4.23        | 3.14                           | 2.40        | 3.87        | 3.51                    | 2.78        | 4.24        |
|                         | M      | 5.16                           | 4.16        | 6.15        | 3.75                    | 2.76        | 4.74        | 3.97                           | 3.02        | 4.92        | 4.77                    | 3.82        | 5.72        |
|                         | Total  | 4.40                           | 3.77        | 5.02        | 3.61                    | 2.99        | 4.24        | 3.55                           | 2.95        | 4.16        | 4.14                    | 3.54        | 4.74        |
| FADMQ Resoluteness (R)  | F      | 12.18                          | 11.23       | 13.14       | 11.78                   | 10.86       | 12.70       | 11.36                          | 10.44       | 12.27       | 12.36                   | 11.47       | 13.25       |
|                         | M      | 12.72                          | 11.47       | 13.97       | 12.13                   | 10.92       | 13.33       | 11.86                          | 10.66       | 13.05       | 12.83                   | 11.67       | 13.98       |
|                         | Total  | 12.45                          | 11.66       | 13.24       | 11.95                   | 11.19       | 12.71       | 11.61                          | 10.85       | 12.36       | 12.59                   | 11.86       | 13.32       |

No significant three way multivariate interaction was found and there was no significant multivariate interaction between time and gender. However, a significant time by group multivariate interaction was obtained:  $F(1, 177) = 5.58; p < .001$ . Inspection of the univariate tests revealed that this interaction involved three of the DVs, namely, CI:  $F(1, 177) = 7.78; p = .007$ , M:  $F(1, 177) = 11.07; p = .001$ , and R:  $F(1, 177) = 7.47; p = .007$ . Figures 7.9, 7.10 and 7.11 illustrate these three time by group interactions respectively.

The 95% confidence intervals for CI indicate that those who undertook the intervention reported less indecision after the course than controls. These ranged from 27.58 to 31.87 for the Teacher group and from 31.05 to 35.17 for the Control group. This effect was calculated at  $d = .35$ . Controls were not found to differ on levels of CI from the pre-test to the post-test, whereas, the Teacher group participants experienced less CI after the course as was established in section two.

The significant interactions concerning M and R were not as clear-cut. Simple effects analyses found there were no significant differences between the Teacher group or the Control group at either of the testing times on levels of M. It was established, however, that while there was no change in M from the pre-test to the post-test for the Control group, there was a significant decrease in students' level of maladaptive decision coping patterns following the intervention for the Teacher group:  $F(1, 188) = 5.90; p = .017 (d = .27)$ . Simple effects analyses for levels of R also found there were no significant differences between the Teacher group or the Control group at either of the testing times. Unlike M, it was established that no change in R from the pre-test to the post-test was experienced by those who undertook the intervention (Teacher group) however, those in the Control group reported a more resolute approach to decision-making at the post-test compared to the pre-test:  $F(1, 191) = 7.03; p = .009 (d = .28)$ .

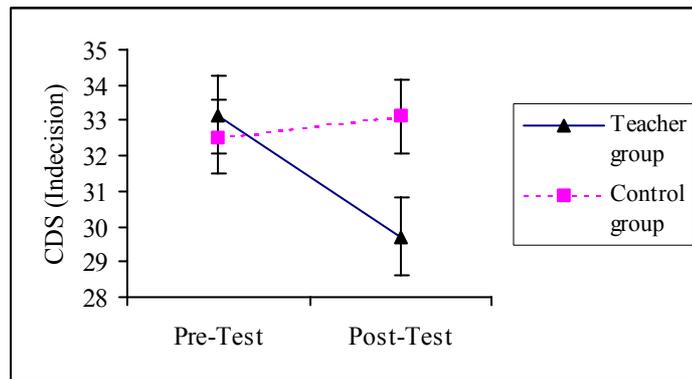


Figure 7.9. Mean CI scores for Teacher group and Control group Pre-Test to Post-Test

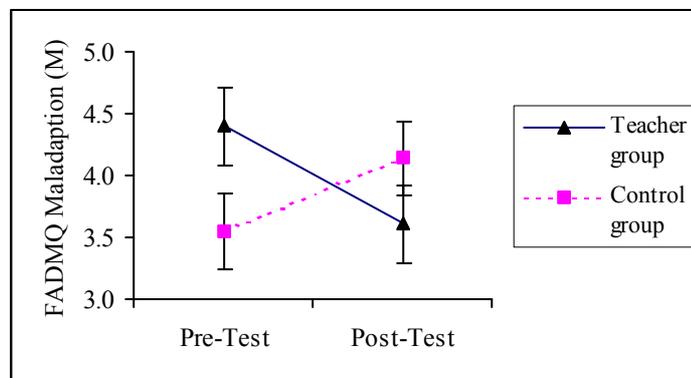


Figure 7.10. Mean M scores for Teacher group and Control group Pre-Test to Post-Test

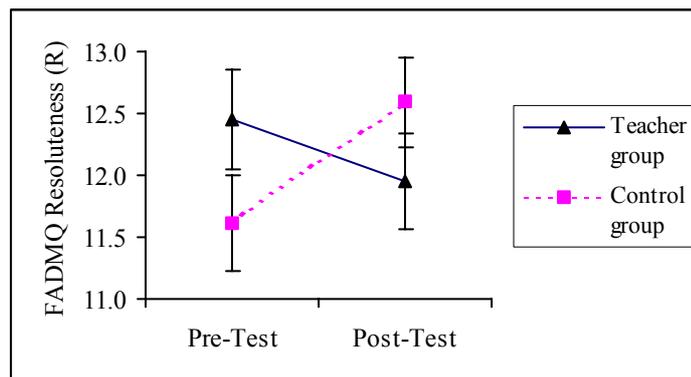


Figure 7.11. Mean R scores for Teacher group and Control group Pre-Test to Post-Test

A multivariate main effect for time was obtained:  $F(1, 177) = 4.57; p = .001$ . The univariate tests found this involved CM:  $F(1, 177) = 2.55; p < .001$ . Inspection of the means showed that levels of CM increased overall from the first to the second testing time. There was only one between subjects effect for Gender, which involved M:  $F(1, 177) = 7.32; p = .013$ . This finding demonstrated that, regardless of whether students were given the career education intervention or not, females reported less maladaptation in their approach to decisions than males.

On the basis of these results, it can be concluded that the fourth hypothesis has been given partial support. Students who received the theoretically based career education intervention with a regular classroom teacher as facilitator were expected to display more improvement in terms of CM, CDMSE, CI, M and R from the pre-test to post-test than controls. This has been found to be the case for two of these DVs. The experimental group benefited in terms of less CI and less M following the intervention. Levels of R improved for the Control group though and CM improved overall for both groups in this analysis. Levels of CDMSE did not change significantly for either group over the two testing times. Hence, the intervention when facilitated by teachers, had a positive effect on students' levels of indecision and maladaptation toward career decision-making for this particular sample of Year 10 students.

#### *Section Five: Theory Based Intervention versus School Based Career Education*

In order to determine if the theoretically derived career education intervention had any advantages over the school based vocational course, a further 2 (time; pre-test & post-test) X 2 (group; Teacher group [matched sample] & Generic group) X 2 (gender) mixed repeated measures MANOVA was conducted. This time, the pre-test and post-test results of a matched sample of Teacher group students were compared with the survey data taken from the Generic group students. This latter group comprised the Year 10 students who were not given the intervention at all since they were enrolled in a specific vocationally oriented education course run over the entire year by the school. These students generally chose this vocational stream of subjects for Year 10 because they were intending to leave school at the end of the year rather than remain for Years 11 and 12.

Since the Generic group students were fundamentally different to the mainstream Year 10 students, it was decided to compare them with only those from the Teacher group who reported they were achieving at a low or satisfactory academic level. This formed the criteria for inclusion. High academic achievers were excluded since the Generic group participants were primarily enrolled in the vocationally oriented career program as they were not suited to the alternative academic stream. This brought about a comparable subgroup of students from the Teacher group who were found to match the Generic group participants on the majority of demographic variables. As evidenced by chi square and t-test analyses, the selected Teacher group students were found to match the Generic group students on age, work experience, performance goals, fathers' level of education, and parents' employment status. Since predominantly male students tended to select the school based vocational education course, however, there were significantly more girls in the low achieving sample drawn from the Teacher group than in Generic group. In addition, mothers' education level differed between the groups. A greater than expected proportion of the Teacher group sample had mothers with a primary school or Year 10 level of education and less than expected of the mothers had a Year 12 level of education. In the Generic group, more mothers than expected were educated to a Year 12 level. Table 7.8 presents frequency data for the two groups.

Table 7.8

*Demographic Information at Time 1 for the Teacher and Generic Groups*

|                                 |               | Teacher group<br><i>n</i> = 47 | Generic group<br><i>n</i> = 28 |
|---------------------------------|---------------|--------------------------------|--------------------------------|
| Age                             | <i>M</i>      | 14.5                           | 14.71                          |
|                                 | <i>SD</i>     | .51                            | .50                            |
| Gender                          | Female        | 29 (73%)                       | 9 (32%)                        |
|                                 | Male          | 17 (37%)                       | 19 (78%)                       |
| Part-Time Work Experience       | Yes           | 17 (37%)                       | 17 (57%)                       |
|                                 | No            | 29 (73%)                       | 12 (43%)                       |
| Mother's Education <sup>1</sup> | PS/10         | 29 (73%)                       | 12 (43%)                       |
|                                 | 12            | 9 (20%)                        | 14 (50%)                       |
|                                 | TAFE/UNI      | 8 (17%)                        | 2 (7%)                         |
| Father's Education <sup>1</sup> | PS/10         | 27 (59%)                       | 19 (78%)                       |
|                                 | 12            | 11 (24%)                       | 7 (21%)                        |
|                                 | TAFE/UNI      | 8 (17%)                        | 3 (11%)                        |
| Employment Status <sup>2</sup>  | 0             | 23 (50%)                       | 13 (47%)                       |
|                                 | 1             | 17 (35%)                       | 11 (39%)                       |
|                                 | 2             | 4 (8%)                         | 2 (7%)                         |
|                                 | 3             | 3 (7%)                         | 2 (7%)                         |
| Performance Goals               | Specified     | 37 (78%)                       | 17 (71%)                       |
|                                 | Not Specified | 10 (22%)                       | 11 (39%)                       |

*Note*<sup>1</sup>: PS/10 = primary school or Year 10 level of education, 12 = Year 12, TAFE/UNI = TAFE or similar tertiary course or a university level of education.

*Note*<sup>2</sup>: 0 = no parent unemployed, 1 = mother, 2 = father, 3 = both parents unemployed.

As mentioned previously, the ANOVA that was run to check if the two groups were the same as each other on the five DVs at the baseline testing time revealed one significant difference. The levels of resoluteness toward decision-making were significantly lower for the sample drawn from the Teacher group than for the Generic group students at the first testing time:  $F(1, 72) = 7.58; p = .012$ . Therefore, the MANOVA conducted for the present comparison used four rather than five DVs as it was decided to drop R from this analysis. Table 7.9 provides the means and confidence intervals for the two groups on the four DVs utilised (see Appendix L for standard deviations).

Table 7.9

*Summary Statistics for Males and Females in the Teacher and Generic Groups*

| Dependent Variables     | Gender | Teacher Group (Matched Sample)<br><i>n</i> = 46 |             |             |                         |             |             | Generic Group<br><i>n</i> = 48 |             |             |                         |             |             |
|-------------------------|--------|---|-------------|-------------|-------------------------|-------------|-------------|--------------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                         |        | Pre-Test  |             |             | Post-Test               |             |             | Pre-Test                       |             |             | Post-Test               |             |             |
|                         |        | 95% Confidence Interval                         |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval        |             |             | 95% Confidence Interval |             |             |
|                         |        | <i>M</i>  | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound | <i>M</i>                       | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound |
| CMI-R Attitude (CM)     | F      | 9.69  | 8.45        | 10.93       | 10.38                   | 9.27        | 11.49       | 7.89                           | 5.66        | 10.12       | 8.44                    | 6.46        | 10.43       |
|                         | M      | 9.65  | 8.02        | 11.27       | 11.82                   | 10.38       | 13.27       | 9.37                           | 7.83        | 10.91       | 8.53                    | 7.16        | 9.90        |
|                         | Total  | 9.67  | 8.65        | 10.69       | 11.10                   | 10.19       | 12.01       | 8.63                           | 7.27        | 9.98        | 8.49                    | 7.28        | 9.69        |
| CDMSE                   | F      | 85.93   | 79.77       | 92.09       | 89.14                   | 83.89       | 94.38       | 84.22                          | 73.16       | 95.28       | 82.44                   | 73.03       | 91.86       |
|                         | M      | 88.35   | 80.31       | 96.40       | 89.77                   | 82.91       | 96.62       | 93.21                          | 85.60       | 100.82      | 80.63                   | 74.15       | 87.11       |
|                         | Total  | 87.14   | 82.08       | 92.21       | 89.45                   | 85.14       | 93.77       | 88.72                          | 82.00       | 95.43       | 81.54                   | 75.82       | 87.25       |
| CDS Indecision (CI)     | F      | 33.07   | 29.26       | 36.88       | 30.52                   | 27.42       | 33.61       | 36.33                          | 29.49       | 43.18       | 38.78                   | 33.23       | 44.33       |
|                         | M      | 33.24   | 28.26       | 38.21       | 29.06                   | 25.02       | 33.40       | 32.16                          | 27.45       | 36.87       | 38.68                   | 34.86       | 42.51       |
|                         | Total  | 33.15   | 30.02       | 36.29       | 29.79                   | 27.24       | 32.33       | 34.25                          | 30.09       | 38.40       | 38.73                   | 35.36       | 42.10       |
| FADMQ Maladaptation (M) | F      | 4.03  | 2.87        | 5.20        | 3.45                    | 2.32        | 4.58        | 5.33                           | 3.24        | 7.43        | 5.56                    | 3.53        | 7.59        |
|                         | M      | 5.71  | 4.18        | 7.23        | 4.24                    | 2.76        | 5.71        | 5.37                           | 3.93        | 6.81        | 5.47                    | 4.08        | 6.87        |
|                         | Total  | 4.87  | 3.91        | 5.83        | 3.84                    | 2.91        | 4.77        | 5.35                           | 4.08        | 6.62        | 5.52                    | 4.28        | 6.75        |

The significant time by group interaction was the only within subjects multivariate effect found:  $F(1, 70) = 3.03; p = .023$ . This significant interaction involved CM:  $F(1, 70) = 4.47; p = .038$ , CDMSE:  $F(1, 70) = 7.21; p = .015$ , and CI:  $F(1, 70) = 7.15; p = .009$  as evidenced by the univariate tests. Figures 7.12, 7.13 and 7.14 graphically illustrate the significant interactions for CM, CDMSE and CI respectively.

The post-test CM confidence intervals ranged from 7.28 to 9.69 for the Generic group and from 10.19 to 12.01 for the students in the Teacher group (matched sample). These intervals indicate that students who were given the theoretically based career education intervention experienced enhanced levels of CM at the second testing time compared to the students undertaking the school based vocational course. This difference produced an effect size of  $d = .87$ . Simple effects analysis revealed the Generic group's level of CM did not differ over the two testing times, whereas, the Teacher group matched sample students made significant gains in CM from the pre-test to the post-test:  $F(1, 72) = 7.93; p = .007$  with a standardized effect of  $d = .43$ .

In terms of CDMSE, the Teacher group participants experienced similar levels of confidence from the pre-test to the post-test, whereas the Generic group students reported a reduction in self-efficacy at the second testing time compared to the pre-test as evidenced by simple effects analysis:  $F(1, 72) = 1.12; p = .002$ . An effect size of  $d = .43$  was observed for this drop in CDMSE for the students who did not undertake the intervention. Simple effects analysis also revealed students in the Generic group were significantly less confident than their counterparts in the Teacher group matched sample at the post-test:  $F(1, 72) = 5.92; p = .017$ . This mean difference produced a moderate effect ( $d = .55$ ).

Levels of CI also favoured the students who undertook the theoretically derived career education intervention. These students experienced less indecision at the post-test than the Generic group students. The confidence intervals for this comparison ranged from 27.24 to 32.33 for the Teacher group matched sample and from 35.36 to 42.10 for the Generic group. This effect was calculated at  $d = 1.08$ , which denotes a large standardized effect (Cohen, 1988). The Generic group students also reported more indecision from the first to the second testing time according to simple effects analysis:  $F(1, 72) = 5.77; p = .019$  ( $d = .47$ ). There was no significant difference between the scores on CI for Teacher group matched sample from the pre-test to the post-test.

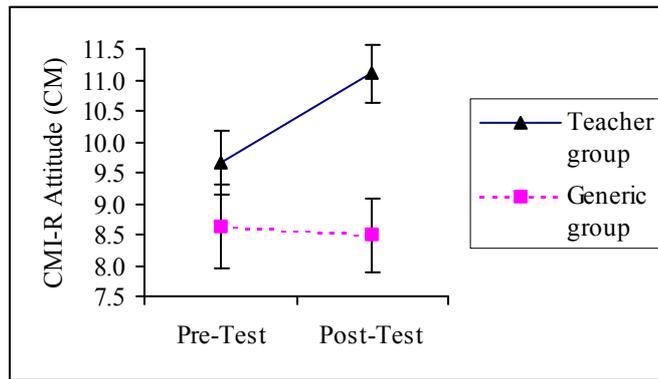


Figure 7.12. Mean CM scores for the Teacher group (matched sample) and the Generic group Pre-Test to Post-Test

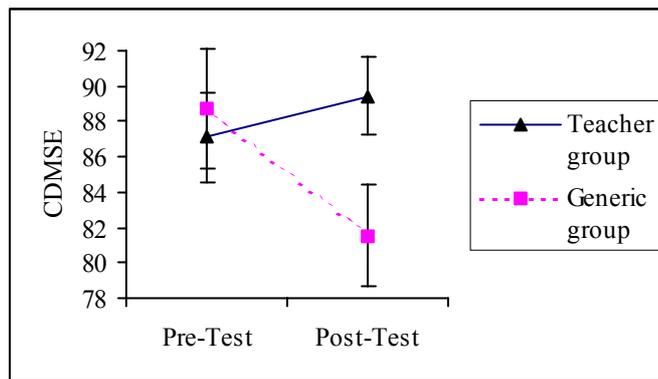


Figure 7.13. Mean CDMSE scores for the Teacher group (matched sample) and the Generic group Pre-Test to Post-Test

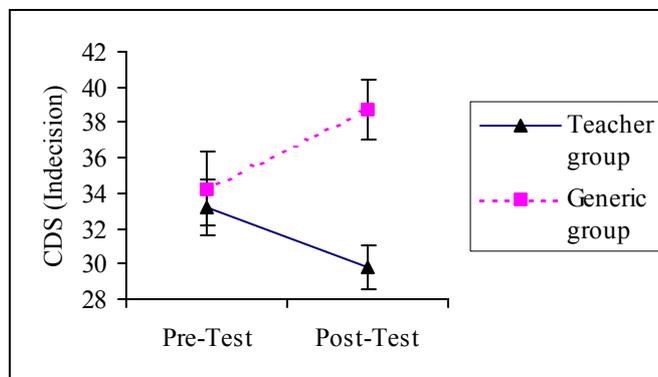


Figure 7.14. Mean CI scores for the Teacher group (matched sample) and the Generic group Pre-Test to Post-Test

Significant between groups effects were obtained for CM:  $F(1, 70) = 7.54; p = .013$  and CI:  $F(1, 70) = 7.21; p = .009$  demonstrating that, regardless of gender, the participants in the Teacher group displayed more mature attitudes toward career decision-making and less indecision overall than those in the Generic group.

Taken as a whole, the results for section five are supportive of Hypothesis 7.5. As expected, students who received the theoretically based career education intervention facilitated by a regular classroom teacher displayed more improvement in terms of CM, CDMSE, and CI at the post-test than those in Generic group. The students who did not experience the intervention, but who were undergoing a school based, generic vocationally oriented education course, appeared to be at a disadvantage in terms of maturity, confidence and indecision compared with the matched sample of students from the Teacher group. Levels of maladaptive decision coping patterns were not shown to significantly differ between these two groups.

#### *Section Six: Long Term Effects of the Intervention with “Expert” Facilitator*

This part of Study 3 set out to determine if students taught by the career development “expert” displayed more positive gains eight weeks after the career decision-making intervention than immediately following it. It also investigated whether these effects were retained a further twelve weeks later. Hence, this analysis was a 4 (time) X 2 (gender) mixed repeated measures MANOVA. The four levels of the time IV were: the pre-test, immediate post-test, 8 week follow-up test, and the 20 week follow-up test (see Table 7.1). Descriptive statistics for the five DVs across the four testing times according to gender are displayed in Table 7.10 (see Appendix M for standard deviations).

Table 7.10

*Summary Statistics for the five Dependent Variables for Males and Females in the Expert Group*

|                         |        | Expert Group            |             |             |                         |             |             |                         |             |             |                         |             |             |
|-------------------------|--------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                         |        | <i>n</i> = 92           |             |             |                         |             |             |                         |             |             |                         |             |             |
| Dependent Variables     | Gender | Pre-Test                |             |             | Post-Test               |             |             | 8 Week Follow-Up        |             |             | 20 Week Follow-Up       |             |             |
|                         |        | 95% Confidence Interval |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval |             |             |
|                         |        | <i>M</i>                | Lower Bound | Upper Bound |
|                         |        |                         |             |             |                         |             |             |                         |             |             |                         |             |             |
| CMI-R Attitude (CM)     | F      | 9.27                    | 8.48        | 10.06       | 11.00                   | 10.12       | 11.88       | 11.50                   | 10.67       | 12.33       | 10.10                   | 9.17        | 11.02       |
|                         | M      | 10.03                   | 9.12        | 10.93       | 8.53                    | 7.52        | 9.53        | 11.33                   | 10.38       | 12.27       | 9.38                    | 8.32        | 10.43       |
|                         | Total  | 9.65                    | 9.05        | 10.25       | 9.76                    | 9.10        | 10.43       | 11.41                   | 10.78       | 12.04       | 9.74                    | 9.04        | 10.44       |
| CDMSE                   | F      | 89.89                   | 85.88       | 93.89       | 92.50                   | 88.61       | 96.39       | 91.39                   | 87.32       | 95.45       | 93.02                   | 88.08       | 97.96       |
|                         | M      | 89.45                   | 84.88       | 94.02       | 89.05                   | 84.62       | 93.48       | 89.08                   | 84.44       | 93.71       | 90.18                   | 84.54       | 95.81       |
|                         | Total  | 89.67                   | 86.63       | 92.71       | 90.78                   | 87.83       | 93.72       | 90.23                   | 87.15       | 93.31       | 91.60                   | 87.85       | 95.34       |
| CDS Indecision (CI)     | F      | 31.67                   | 29.31       | 34.04       | 31.44                   | 28.84       | 34.04       | 27.62                   | 24.90       | 30.33       | 28.35                   | 25.62       | 31.08       |
|                         | M      | 32.48                   | 29.78       | 35.17       | 37.53                   | 34.56       | 40.49       | 30.70                   | 27.60       | 33.80       | 30.40                   | 27.29       | 33.51       |
|                         | Total  | 32.07                   | 30.28       | 33.87       | 34.48                   | 32.51       | 36.45       | 29.16                   | 27.10       | 31.22       | 29.37                   | 27.30       | 31.44       |
| FADMQ Maladaptation (M) | F      | 3.90                    | 3.16        | 4.65        | 3.52                    | 2.75        | 4.29        | 3.67                    | 2.78        | 4.57        | 3.50                    | 2.74        | 4.26        |
|                         | M      | 3.45                    | 2.60        | 4.30        | 4.70                    | 3.82        | 5.58        | 5.13                    | 4.11        | 6.14        | 4.55                    | 3.69        | 5.41        |
|                         | Total  | 3.68                    | 3.11        | 4.24        | 4.11                    | 3.53        | 4.69        | 4.40                    | 3.72        | 5.08        | 4.03                    | 3.45        | 4.60        |
| FADMQ Resoluteness (R)  | F      | 11.58                   | 10.59       | 12.57       | 11.87                   | 11.00       | 12.73       | 11.79                   | 10.79       | 12.78       | 11.62                   | 10.50       | 12.72       |
|                         | M      | 12.95                   | 11.82       | 14.08       | 12.85                   | 11.86       | 13.84       | 12.70                   | 11.57       | 13.84       | 12.40                   | 11.14       | 13.66       |
|                         | Total  | 12.26                   | 11.51       | 13.02       | 12.36                   | 11.70       | 13.01       | 12.24                   | 11.49       | 13.00       | 12.01                   | 11.17       | 12.85       |

A significant multivariate time by gender interaction was found:  $F(1, 90) = 2.48; p = .001$  with the univariate tests showing that levels of CM:  $F(1, 70) = 8.80; p < .001$  and M:  $F(1, 70) = 4.48; p = .004$  fluctuated over time in different ways depending on the gender of participants. Figures 7.15 and 7.16 respectively illustrate these significant interactions.

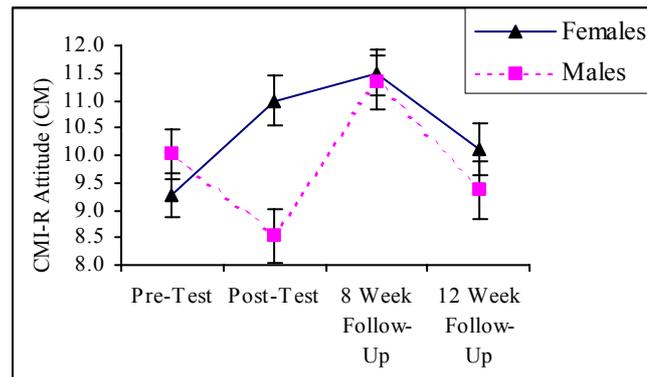


Figure 7.15. Mean CM scores for Females and Males across the Four Testing Times

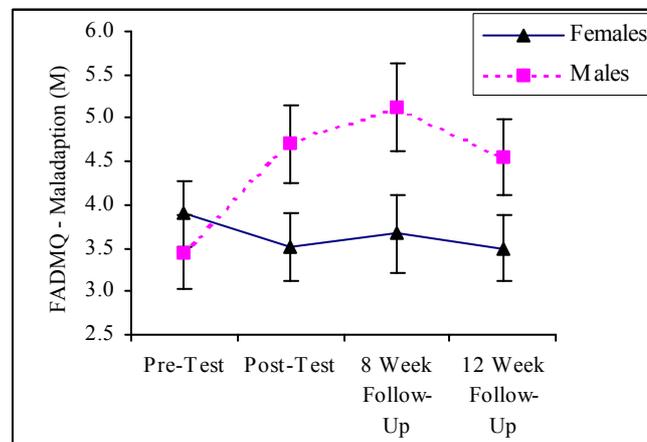


Figure 7.16. Mean M scores for Females and Males across the Four Testing Times

Simple effects analysis revealed females did not make significantly more gains in terms of their maturity toward career decision-making at the 8 week follow-up testing time compared to the gains made in CM immediately after the intervention. At the 20 week follow-up test, females reported significantly less CM than the level

maintained at the 8 week follow-up:  $F(1, 98) = 14.59; p < .001 (d = .47)$ . The males reported significantly more mature attitudes from the post-test to the 8 week follow-up test:  $F(1, 98) = 37.87; p < .001 (d = .84)$  although this significant gain in CM was not upheld at the 20 week follow-up, at which time significantly less CM was reported:  $F(1, 98) = 19.49; p < .001 (d = .57)$ .

Inspection of the confidence intervals for females' level M across the four testing times showed no change. Females were consistent in terms of their maladaptive approach to decisions following the intervention. Simple effects analysis for the males' level of M showed there was no significant difference from the previously established significant increase in M at the post-test (see section two) to the 8 week follow-up test. Likewise, there was no difference from the 8 week to the 20 week follow-up test. This shows that the significant increase in maladaptive decision coping patterns for the males in the Expert group found immediately after the intervention remained at a similar level for a further 20 weeks.

The present MANOVA also revealed a significant multivariate main effect for time:  $F(1, 90) = 5.80; p < .001$ . The univariate tests determined this involved CI:  $F(1, 90) = 1.77; p < .001$ . Figure 7.17 shows the males' and females' mean indecision scores across the four testing times as well as a middle line, which illustrates the effect for time total scores across males and females. Although levels of CI in the Expert group heightened immediately after the intervention, as shown in the second section of this chapter, the level of indecision for this group actually decreased from the post-test to the 8 week follow-up test. The confidence intervals of 32.51 to 36.45 for the post-test and 27.10 to 31.22 for the 8 week follow-up attest to this. An effect size of  $d = .54$  was observed for this mean difference. This reduction in CI was retained in the long term as evidenced by the marked overlap in the confidence intervals from the 8 week follow-up (i.e., 27.10 to 31.22) to the 20 week follow-up (i.e., 27.30 to 31.44). There was one between subjects effect also involving CI:  $F(1, 90) = 4.12; p = .045$  with males reporting more indecision overall than females.

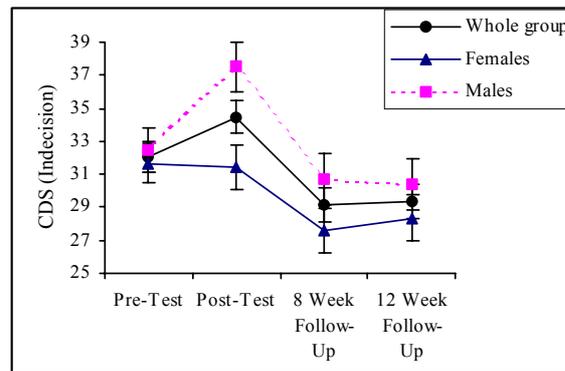


Figure 7.17. Mean CI scores across the Four Testing Times

It was hypothesised that students would display greater gains in terms of CM, CDMSE, CI, M and R at subsequent testing times following the intervention taught by the career development “expert”. Specifically, participants were expected to show improvements on these DVs eight weeks after the intervention compared with immediately after, and it was also expected that they would experience further enhancement at the second follow-up twelve weeks later. Support for this hypothesis was limited.

Two of the DVs, namely CDMSE and R, displayed no significant differences in terms of the IVs, time and gender. The “expert” intervention did not have a statistically significant impact upon females’ and males’ confidence in, or resolute approach toward, career decisions. The other three DVs were shown to differ over time and in accordance with the gender of participants in significant ways. In general, improvements were in evidence at the first follow-up test but were not held in the long term, and females tended to experience greater gains than males.

#### *Section Seven: Long Term Effects of the Intervention with Teachers as Facilitators*

The long term outcomes for the students who undertook the intervention when it was facilitated by regular classroom teachers were investigated in this section of Study 3. More positive gains 12 weeks after the career decision-making intervention than immediately following it were anticipated. This analysis was a 3 (time) X 2 (gender) mixed repeated measures MANOVA. The time IV involved the pre-test, the immediate post-test, and the 12 week follow-up test (i.e., T2, T3 and T4; see Table 7.1). The Teacher group means and confidence intervals for the five DVs across the three testing times according to gender are displayed in Table 7.11 (see Appendix N for standard deviations).

Table 7.11

*Summary Statistics for the Five Dependent Variables for Males and Females in the Teacher group*

|                         |        | Teacher Group                        |             |             |                         |             |             |                         |             |             |
|-------------------------|--------|--------------------------------------|-------------|-------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|
|                         |        | <i>n</i> = 81 (50 Females, 31 Males) |             |             |                         |             |             |                         |             |             |
| Dependent Variables     | Gender | Pre-Test                             |             |             | Post-Test               |             |             | 8 Week Follow-Up        |             |             |
|                         |        | 95% Confidence Interval              |             |             | 95% Confidence Interval |             |             | 95% Confidence Interval |             |             |
|                         |        | <i>M</i>                             | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound | <i>M</i>                | Lower Bound | Upper Bound |
| CMI-R Attitude (CM)     | F      | 10.26                                | 9.26        | 11.27       | 10.80                   | 9.98        | 11.63       | 9.60                    | 8.68        | 10.52       |
|                         | M      | 10.19                                | 8.92        | 11.47       | 11.71                   | 10.66       | 12.76       | 9.45                    | 8.29        | 10.61       |
|                         | Total  | 10.23                                | 9.42        | 11.04       | 11.26                   | 10.59       | 11.92       | 9.53                    | 8.79        | 10.27       |
| CDMSE                   | F      | 89.68                                | 85.64       | 93.72       | 90.86                   | 87.06       | 94.66       | 89.76                   | 85.35       | 94.17       |
|                         | M      | 92.81                                | 87.68       | 97.94       | 92.00                   | 87.17       | 96.83       | 93.39                   | 87.78       | 98.99       |
|                         | Total  | 91.24                                | 87.98       | 94.51       | 91.43                   | 88.36       | 94.50       | 91.57                   | 88.01       | 95.14       |
| CDS Indecision (CI)     | F      | 32.06                                | 29.17       | 34.95       | 28.62                   | 25.94       | 31.30       | 29.46                   | 26.78       | 32.14       |
|                         | M      | 34.61                                | 30.94       | 38.28       | 31.26                   | 27.85       | 34.66       | 29.52                   | 26.11       | 32.92       |
|                         | Total  | 33.34                                | 31.00       | 35.67       | 29.94                   | 27.77       | 32.11       | 29.49                   | 27.32       | 31.66       |
| FADMQ Maladaptation (M) | F      | 3.62                                 | 2.73        | 4.51        | 3.42                    | 2.61        | 4.23        | 3.58                    | 2.72        | 4.44        |
|                         | M      | 5.19                                 | 4.07        | 6.32        | 3.77                    | 2.75        | 4.80        | 4.07                    | 2.97        | 5.16        |
|                         | Total  | 4.41                                 | 3.69        | 5.12        | 3.60                    | 2.95        | 4.25        | 3.82                    | 3.13        | 4.52        |
| FADMQ Resoluteness (R)  | F      | 12.16                                | 11.18       | 13.14       | 11.78                   | 10.83       | 12.74       | 11.68                   | 10.60       | 12.76       |
|                         | M      | 12.77                                | 11.53       | 14.02       | 12.23                   | 11.01       | 13.44       | 11.81                   | 10.43       | 13.18       |
|                         | Total  | 12.47                                | 11.67       | 13.26       | 12.00                   | 11.23       | 12.78       | 11.74                   | 10.87       | 12.62       |

This analysis did not reveal a time by gender multivariate interaction, and nor was there a main effect for gender. This means that the students who did the intervention with their teachers as facilitators, experienced similar outcomes in terms of their career development regardless of whether they were male or female.

A significant multivariate effect for time was obtained:  $F(1, 79) = 7.05$ ;  $p < .001$  with the univariate tests revealing that this effect involved CM:  $F(1, 79) = 17.77$ ;  $p < .001$ , CI:  $F(1, 79) = 8.58$ ;  $p < .001$ , and M:  $F(1, 79) = 3.47$ ;  $p = .034$  (see Figures 7.18, 7.19 and 7.20). Simple effects analysis showed students in the Teacher group made significant gains in their attitude toward career decision-making (CM) from the pre-test to the post-test:  $F(1, 85) = 1.80$ ,  $p = .001$  ( $d = .32$ ) but this was not held 12 weeks later. Mean CM scores were significantly lower at the 12 week follow-up test than at the post-test:  $F(1, 85) = 25.57$ ,  $p < .001$  ( $d = .57$ ). Simple effects analysis also revealed levels of CI were significantly lower from the pre-test to the post-test:  $F(1, 83) = 11.37$ ,  $p = .001$  ( $d = .34$ ) and that this decrease was held at the 12 week follow-up. Similarly, M was found to decrease significantly from the pre-test to the post-test:  $F(1, 84) = 7.43$ ,  $p = .013$  ( $d = .27$ ) and was maintained at the 12 week follow-up.

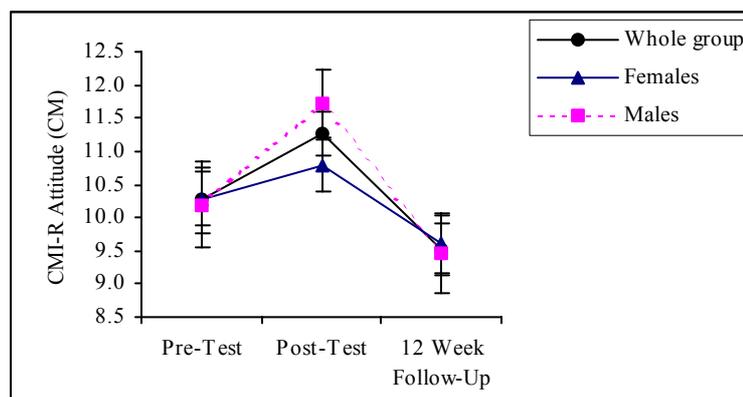


Figure 7.18. Mean CM scores for Teacher group across the Three Testing Times

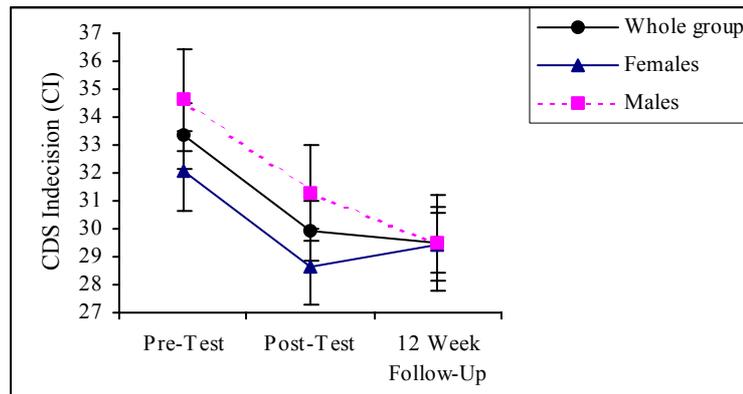


Figure 7.19. Mean CI scores for Teacher group across the Three Testing Times

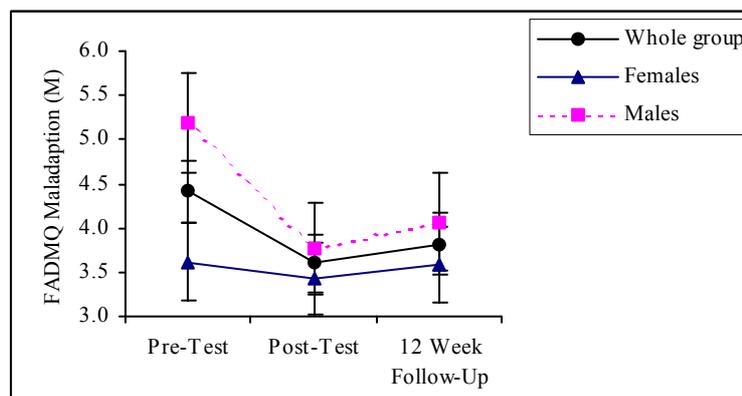


Figure 7.20. Mean M scores for Teacher group across the Three Testing Times

Taken together, these results do not support the seventh hypothesis since none of the DVs showed more positive gains at the 12 week follow-up test compared to the immediate post-test. Levels of three of the DVs (i.e., CM, CI and M) were shown to reflect enhanced career development immediately after the intervention but these improvements were not enhanced 12 weeks later. Rather, CM was significantly reduced at the follow-up testing time while reductions in CI and M were maintained in the long term. Levels of efficacy for career decision-making (CDMSE) and the strength of resolve students reported in their approach to decision-making (R) were not significantly affected by the intervention either at the post-test or the follow-up test.

*Section Eight: Supplementary Evaluative Data*

In an attempt to glean information about the worth of the intervention from sources other than the self report survey data, the facilitators, career guidance staff, and the students themselves were consulted. In the first instance, the career development “expert” and the teachers who delivered the intervention each produced a written reflexive account of each of the six lessons. In addition, these individuals took part in a group interview, which was taped and transcribed to gain additional feedback and general opinions about the intervention as a whole. The second source of supplementary data came from the two guidance officers based at the school as well as intake personnel at the Jobs Pathway office, the government funded careers advise centre at the school. These particular staff members were asked to fill in a pro forma (see Appendix O) each time a student taking part in the intervention approached them with a career-related inquiry. Thirdly, the students were given a course evaluation sheet (see Appendix P) to complete at the end of the final lesson.

*Facilitators’ Reflexive Accounts and General Feedback.*

Examination of the reflexive accounts and the content analysis of the focus group interview provided a wealth of information about what was deemed successful and generally enjoyed by all participants and what specific aspects of the course lacked impact for one reason or another. Results of this qualitative data analysis will be presented in brief. Aspects of the intervention deemed to be requiring modification have been afforded most attention since the positive feedback was largely of a non-specific nature.

Firstly, teachers felt some of the content of the course was too "high-brow" (Teacher number 5) and that there was too much "academic jargon" (5). Participant number 2 stated that:

The occasional big word does give it [the course] credibility. ... They think they're doing something about psychology, it's interesting, it gives that sense of they're doing something deep and meaningful, but it needs to be simpler plain English so the kids could follow easier.

Many suggestions were made on how to improve the layout of student booklets. Teachers wanted fewer passages for students to peruse as the average reading ability precluded them from comprehensive coverage of the written material in the time prescribed. Diagrammatic representations, puzzles and word searches were recommended as more effective ways to disseminate information to these students. Consequently, the entire student booklet has since been redeveloped in line with these requests.

Moreover, the teachers felt that the students found some of the group activities difficult in that “they're very loathe to be reflective” (2). One teacher said, “They don't like to talk about really personal things. I noticed my own class, when they were doing it, some of those strengths and weaknesses activities, and I've had these kids since February, there were still kids who were very reluctant to talk, especially the boys” (3). All facilitators agreed that the students needed more experience with self-reflection to develop their meta cognitive skills, which they regarded as generally inadequate for this type of course. Indeed, as the career development “expert” facilitator, I found many of these young people were unfamiliar and uncomfortable with the types of personal issues they were asked to discuss in their groups. For instance, when asked to talk about something they were good at or something they liked about themselves, one student said to me, “but that's ‘up yourself’ Miss.” Reflecting upon goals they had set for themselves in the past was also a difficult, if not impossible task for many of the students (1).

Another general theme to emerge from the accounts and the interview was the magnitude of the intervention. All facilitators agreed that the course material was difficult to cover in just six lessons and that each lesson period needed to be extended or made into two or more separate lessons. One teacher stated: “The lesson plans are, in my opinion, far too long” (5). The following comment also illustrates this widely held viewpoint:

I'm finding they're getting the point of each lesson, particularly that cycle where you've got the questions outlined [but] . . . what I'm saying is, the focus of each lesson like self-confidence or what influences you, I can see they're getting an understanding of it but I think that in a way we give them too much and it's too much to take in at one time (4).

Some of the teachers suggested that the course be run over a block of lessons rather than spreading it out over six weeks. Indeed, the teachers felt that it would be better to lengthen the course and run it over the entire eight to ten weeks of first term at the beginning of Year 10. This was seen as a way of covering the material more thoroughly. In addition, it was suggested that the intervention be made part of students' overall marks for English in that year. This was seen as a way of amending the problem of "kids not handing in booklets, not taking the course seriously ... make it part of their assessment" (3).

Finally, the teachers gave a warning that "there's a culture in this school of taking pride in under-achievement" (2). They painted a fairly glum picture of a substantial cohort of students who were seen to be attending school, but who were not really engaged in the learning process. These students were regarded as the ones who were "getting VLAs" (5), that is, very limited achievement marks, because they were not only disruptive in class but were also not handing in the required work for assessment and thus, were failing. The teachers felt that these under achievers were "filling in time" (4) and were just waiting until they could "leave school and go on the dole [unemployment benefits]" (4).

I would like to add at this juncture that, despite my training as a teacher, I did experience difficulty managing some inappropriate behaviour in the classes I taught. I asked the other facilitators if they had similar problems to which one replied, "the first 10 minutes of the lesson is basically cracking the whip to get them into control, and of course I knew they would try you [the career development "expert"] out because you are an outsider and they'd think, what's this person going to do?" (3). Indeed, I submit an excerpt from my own reflexive account of the first lesson to depict the classroom management problems I encountered:

It was obvious to me from the outset the difference in maturity level between genders. If I had any difficulty controlling students who were being disruptive, it was always a boy with only one exception. Usually these boys were talking while I was speaking or laughing or making 'put-down' type comments about those who were contributing to discussions (1).

The general consensus about the intervention to emerge from this analysis of all reflexive accounts and interview themes was that it was both necessary and worthwhile but that certain modifications were required. The course needed to be

made more suitable for the predominantly low academic ability of these particular students. It was also deemed too “jam-packed” (3) and thus needed to be run over a longer period with more than just the one lesson per week. The overriding impression gained by all facilitators was that students such as these needed much more of this type of personal awareness training as well as career decision-making and goal setting training and that this be undertaken much earlier in their school life.

*Pro Formas Submitted by Guidance Personnel.*

Pro formas were left with the two guidance officers and with frontline personnel at the Jobs Pathway centre at the school. Said staff members were asked to complete them if and when students from Year 10, who were in the particular classes doing the intervention, approached them for career-related advice during that time.

Students are regularly informed of the availability of these services and are encouraged to utilise these sources of professional career guidance assistance. However, as evidenced by the information gleaned from Study 1, students tend not to meet with a guidance officer other than for their one compulsory appointment during Year 10. Furthermore, interviewees in Study 1 stated that students rarely sought the career guidance assistance provided by the guidance officers or the Jobs Pathway centre on a voluntarily basis. Hence, the aim of this part of Study 3 was to determine if the experience of taking part in the career decision-making education intervention prompted improved patronage of these on site services.

Despite approximately 250 students having been exposed to the intervention, only six pro formas were completed. This means that during the course of the intervention, only six students made voluntary visits to the career guidance professionals at the school. One person sought advice about resume writing, four students asked for help with regard to career decision-making and /or subject selection and the other query concerned course information for Year 11. In all six instances, when asked what prompted them to seek advice at that time, no mention was made of the intervention. Two students said their mother had encouraged them to seek assistance and one cited his parents as the instigators. One student stated, “I had been thinking about coming for a long time” while another said she was looking for part-time work. The remaining student was unsure about what prompted her visit.

*Student Feedback via Course Evaluation Sheets.*

The course evaluation sheets (see Appendix P) involved a combination of four items and three open ended questions. The items asked students to provide ratings of the course with regard to how interesting, useful and informative they found it, as well as the degree to which they believed it impacted upon their decision-making ability. Responses ranged from “very interesting”, “interesting”, “just ok” to “boring”; “very useful”, “useful”, “some parts useful” to “useless”; “learnt a lot”, “learnt something”, “learnt very little” to “a waste of time” and “much better”, “a little better”, “about the same”, “a little worse” to “backwards” respectively. The open ended questions asked what students liked most and least about the course and a third invited additional comments or suggestions. The responses were content analysed and the most common responses were quantified. Table 7.12 provides summary statistics for the student evaluation sheets.

Students were informed that the completion of these feedback sheets was on a voluntary basis and that they were not required to place their name on them. The response rate was approximately 75%. Over 40% of respondents indicated that they found the course to be just okay with around one quarter of the remaining students reporting they found it interesting and another quarter found it boring. The majority of students, however, said they found the course useful with most of the remainder indicating they found some parts of the course useful. Most students reported that they learnt something and that their decision-making ability either became a little better or remained about the same as a result of doing the course.

Table 7.12

*Summary Statistics for Student Evaluation Sheets*

|                         |                                | <i>N</i> = 147 |
|-------------------------|--------------------------------|----------------|
| Interest Level          | Very interesting               | 8 (5%)         |
|                         | Interesting                    | 39 (27%)       |
|                         | Just OK                        | 72 (42%)       |
|                         | Boring                         | 38 (27%)       |
| Usefulness              | Very useful                    | 13 (9%)        |
|                         | Useful                         | 72 (42%)       |
|                         | Some parts useful              | 55 (37%)       |
|                         | Useless                        | 17 (12%)       |
| Level of Learning       | Learnt a lot                   | 15 (10%)       |
|                         | Learnt something               | 88 (71%)       |
|                         | Learnt very little             | 19 (13%)       |
|                         | Waste of time                  | 24 (17%)       |
| Decision-Making         | Much better                    | 17 (11%)       |
|                         | A little better                | 70 (48%)       |
|                         | About the same                 | 57 (39%)       |
|                         | A little worse                 | 1 (1%)         |
|                         | Backwards                      | 1 (1%)         |
| Liked most              | Researching Career Information | 33 (24%)       |
|                         | Clarifying Interests/Survey    | 23 (17%)       |
|                         | Homework/Student Booklet       | 19 (17%)       |
|                         | Career development influences  | 9 (8%)         |
| Dislikes                | All of it                      | 37 (33%)       |
|                         | No dislikes/Liked all of it    | 18 (17%)       |
|                         | Homework Assignments           | 13 (12%)       |
|                         | Too much work/writing          | 11 (10%)       |
|                         | I don't know/No                | 50 (49%)       |
| Comments or Suggestions | More interesting/exciting      | 14 (14%)       |
|                         | More group work/'hands-on'     | 9 (9%)         |

A variety of statements were made in regard to what students liked most about the intervention. Many young people liked “looking at jobs and looking at what kind of education you need to get for that job” while many others enjoyed learning about their career-related interests. For example, one student wrote: “The part I liked was when we did the occupational activities checklist sheet. It gave me a far better idea of what part I would be suited to.” In terms of dislikes, a third of the respondents wrote, “all of it.” Conversely, there were others who said things like, “none, it was all

interesting” and “I did not dislike anything because it was all good.” When given the opportunity to add any comments or suggestions, the majority of students wrote “no” or left this section blank. Of those who did respond, there were some practical suggestions such as, “you should include more ‘hands-on’ stuff, not like writing but activities that you can do so you can get more involved,” and “I feel there was too much listening. There should be more activity work.”

## Discussion

Study 3 sought to evaluate the impact of the theoretically derived career education intervention on students’ career development. This longitudinal assessment of the course was concerned with both immediate and follow-up effects. Using the survey data, five outcome variables were assessed. These were: the three key career development constructs of career maturity (CM), career decision-making self-efficacy (CDMSE) and career indecision (CI) and the two measures of decision coping patterns, maladaptation (M) and resoluteness (R). These outcomes were examined from the pre-test to the post-test in the first five analyses to determine the effect of the intervention in the short term. The long term effect of the intervention was investigated in a further two analyses. Supplementary data were scrutinized in the final section of this study to augment the survey data. This final section of the present chapter presents a discussion of the results according to these three forms of scrutiny (i.e., short term, long term and auxiliary findings).

### *Short Term Outcomes*

There were five ways in which the short term impact of the intervention was examined. First, the effect of the course on all students, regardless of the facilitator they had, was scrutinized. Gender was included as a between subjects variable since it was expected that the course would have a different impact on males and females. This expectation was corroborated with females making significant gains in terms of their maturity towards career decision-making (CM) while males’ level of CM did not change from the pre-test to the post-test. Females also exhibited less indecision after the course compared to the males.

The next analysis examined this differential effect further by assessing outcomes according to the different modes of delivery. Those taught by the career development “expert” experienced different outcomes than the students who were taught by their regular teachers. Once again, the gender of participants was found to be a significant factor. Females in the Expert condition and males in the Teacher condition exhibited enhanced levels of CM immediately after the course. Females in the Teacher condition did not make significant gains in CM. Males in the Expert condition, however, experienced significantly less maturity following the course. Females’ level of maladaptation toward decision-making was not affected by the intervention no matter who their facilitator. However, males in the Expert group became more maladaptive immediately after the intervention while males in the Teacher group reported significantly less M after the course. The amount of indecision experienced by participants in the Expert and Teacher conditions differed regardless of gender. Those in the Teacher group were less indecisive after the course compared to those in the Expert group who were more indecisive after the course.

These results indicate that the intervention did impact upon three of the career development variables assessed (i.e., CM, M and CI), although students’ confidence in their ability to make career-related decisions (CDMSE) and their resoluteness toward decision-making (R) were not affected by the course in the short term. Perhaps these particular measures of career development require longer and more intensive tutelage. It may be that many years of experiencing a lack of success in their attempts to engage in decision-making tasks, and perhaps the absence of models exhibiting sound decision-making habits, may have forged a level of efficacy and resolve that could not be influenced by a brief intervention of this nature.

The results of Study 1 provided qualitative evidence for a general lack of confidence in this sample of students. The quantitative data revealed an average score of 88.72, which was generally maintained across subsequent testing times. This stable level of confidence may indicate a degree of apprehension about career decision tasks and may be reflected by an avoidance of decision-making. Thus, the level of R toward decisions was also not altered by the experience of the intervention. Since CDMSE was positively related to R in Study 2, it follows that these beliefs about one’s decision-making ability are born out in terms of how

students approach such tasks. In other words, unchanging efficacy for career decision-making may prompt students to adopt a complacent approach to coping with decisions as reflected by levels of R. As proposed by Albion (2000), students may “avoid thinking about their career choice” (p. 19) as a strategy for reducing anxiety. Likewise, Mann et al. (1989) postulated that “adolescent complacency in decision situations is a protective device to mask anxiety ... and [it] reflects an ideological peer group norm in which it is ‘cool’ to be unconcerned” (p. 273). The present findings seem to give some credence to these speculations.

Moreover, the failure of the intervention to impact upon students’ confidence in (CDMSE), and resolve toward (R) decision-making may also further attest to the need for career education to become a prolonged and systematic “series of planned experiences” (Patton, 2000, p. 37), which are embedded into the school curriculum for all students. Perhaps R is a trait-like measure of one’s responsiveness or resistance to change. It may be that this factor, which was drawn from the instrument designed to assess adolescent decision-making coping patterns (i.e., FADMQ), taps into students’ level of persistence when faced with important decisions. The present sample of young people may have exhibited low and stable levels of R because they were not confident in their ability to make career-related decisions and were prone to procrastinate as a result. If this is the case, CDMSE and R may be attributes that require more intensive intervention in order for them to be modified.

Despite the failure of the intervention to impact upon CDMSE and R in the short term, it had a positive impact upon females’ CM when facilitated by the career development “expert”. A moderate effect size (Cohen, 1988;  $d = .55$ ) was obtained for this significant improvement. However, the intervention had a negative impact upon males’ CM and M when taught by the “expert”. Conversely, the intervention, when conducted by regular teachers, had a positive effect on males’ CM ( $d = .50$ ), and M ( $d = .47$ ), but a non-significant effect on females’ CM and M. It appears that females benefit more from an “expert” facilitator and males seem to be more responsive to a teacher facilitator.

The difficulties I encountered as the “expert” facilitator in managing the uncooperative behaviour of the males in my classes could be the reason why these participants did not fare well in this condition. Often it was the males I taught, rather than the females, who were reluctant to take part in self-reflection tasks and who

were disruptive in group activities. Perhaps these males were non-compliant because they felt uneasy talking about themselves in these situations. They may have viewed the “expert” facilitator as an outsider who was not given the same respect as they had for a regular teacher with whom they were familiar and to whom they were accountable. Females, on the other hand, seemed to make more gains if they were taught by the “expert”. Perhaps they were more challenged by the issues, which could have been discussed in greater depth in this condition. The “expert” facilitator may also have placed more emphasis on the key objectives of the course than the teachers and thus the females in the Expert condition concentrated on these more and subsequently did better than the females in the Teacher condition.

Certainly it appears that the career development of males and females would be more enhanced if they were taught in segregated groups, however, this is an impractical option. Due to the different mindsets of each gender, it may be that different emphases in their career education tuition are required. Thus, a mixture of activities to meet the varying needs of males and females may need to be developed. Some previous studies provide evidence for this. For example, Carpenter and Inkson (1999) maintained that “young males are lagging behind their female counterparts ... and are less willing to accept changing career realities” (p. 30). Albion (2000) found “girls report higher levels of motivation towards work and career-related goals than boys” (p. 18). Moreover, Patton and Creed (2001) concluded that “boys may benefit from increased attention to career knowledge and girls from attention to the appropriateness of career planning” (p.349).

The findings of Study 2 may also shed light upon the need for career education to be delivered in different ways for males and females. Therein it was concluded, for example, that male adolescents may have been less aware of the gamut of decisions they needed to face than the females. This baseline examination of the present sample of Year 10 students speculated about the males adopting a sense of false bravado towards career decision-making. Perhaps exposure to the array of career education activities involved in the intervention caused the males, particularly in the Expert condition, to become anxious and to lose their previously held bravado. Females, on the other hand, seemed to prosper from the myriad of activities they were exposed to. Again, this may reflect the differences between males’ and females’

level and pattern of career development and thus attest to the need for segregated or differentiated career education.

Finally, in terms of CI, students reported less indecision after the intervention if it was taught by teachers, and more indecision if it was taught by the career development “expert”. This anomaly could be explained by the different emphasis placed upon certain aspects of the course by the teachers as opposed to the “expert” facilitator. Although the teachers were given explicit instruction on the course content and were provided with detailed lesson plans, information sheets and specific pedagogical guidance, they may have treated some aspects less fervently than the “expert” due to the latter’s experience and knowledge base. This may be the case with regard to CI since I openly ascribed to the belief that students need to look upon indecision about career-related thoughts as something to be expected and accepted for their age and stage of educational progress. Osipow (1999) proposed this notion when he made the distinction between career indecision, which he viewed as a part of normal development on the way to making career-related decisions as opposed to chronic indecisiveness. Perhaps the teachers, on the other hand, were keen to help students resolve their indecision and thus emanated a surreptitious message that CI was something to be amended as quickly as possible.

#### *Short Term Outcomes Compared to Controls*

The next two analyses of the short term effects of the intervention examined the outcomes of the Expert and Teacher groups separately against the Control group. In the first instance, the females in the Expert group fared better in terms of CM than the Control group females. The males in the Expert group, however, experienced less CM after the course compared to males in the Control group whose level of CM did not change during the same period. No other career development variables were found to differ significantly between the Expert and Control group.

The analysis comparing outcomes for the Teacher group with controls found those who did the intervention benefited in terms of CI and M. However, the Control group reported more resoluteness toward decision-making (R) over this time period. It appears the teachers managed to assist students to become more decisive and less maladaptive in their approach to career-related decisions during the course of the

intervention but the remaining three outcome measures (i.e., CM, CDMSE and R) were not affected during their delivery of the intervention.

These last two analyses further endorse the worth of the intervention in terms of the maturation of females in the Expert condition, which entailed a moderate effect ( $d = .55$ ), and the reduction of indecision ( $d = .35$ ) and maladaptive decision coping patterns ( $d = .27$ ) in the Teacher condition. Considering the brief nature of the course, that is, a 70 minute lesson once a week for six weeks, this is an encouraging result. If such a short intervention can have this impact on students' career development, albeit differing according to gender and facilitator, it bodes well for a more extensive undertaking of this nature. Perhaps if the course were run for a longer period and with more frequent lessons, it would have an even greater impact on students' career development. This is postulated tentatively though, as more research is required to test such speculation.

Nevertheless, previous studies have drawn similar conclusions about the effect of career education intervention being dependent upon duration and intensity. For example, Gillies, McMahon and Carroll (1998) suggested that their 10 week (one hour per week) course, which aimed to assist children in Year 7 gain an understanding of themselves and life roles in regard to careers, "may have been too short for meaningful changes to have occurred" (p. 287). Furthermore, in their comprehensive meta-analysis of 58 career intervention studies, Oliver and Spokane (1988) ascertained that class group interventions achieved the largest effects sizes, but that this was tempered by the intensity of the intervention as defined by "number of hours and number of sessions" (p. 458). These authors concluded that career education interventions for class groups of students reach more people and thus are more cost effective, although they pointed out that class interventions require more hours to achieve a strong effect compared with individual career counselling.

#### *Short Term Outcomes Compared to Generic Career Education*

Finally, the short term effects of the intervention were scrutinized in comparison with the outcomes for students who were not exposed to the theoretically derived course, but who were undertaking a school-based vocational course. A matched sample of students based on academic achievement in the Teacher group

were drawn to discern whether the Generic group, who were also taught by regular classroom teachers, would experience comparable outcomes over the eight weeks during which the intervention was run.

This analysis found students in the Generic group made no significant gains in terms of CM over that period. In contrast, the students who did the theory-based course made significant gains in CM and thus were found to have more mature attitudes toward career decision-making at the post-test than the Generic group students. This produced a large effect ( $d = .87$ ). In addition, the students undertaking the school-based vocational curriculum exhibited less confidence in their ability to make career-related decisions ( $d = .43$ ) and more indecision ( $d = .47$ ) over the two testing times. The Teacher group (matched sample) were thus more confident than the Generic group students at the post-test ( $d = .55$ ) and they also exhibited less indecision at this time compared to the Generic group. This latter comparison produced the largest effect for the study with  $d = 1.08$ .

These results attest to the value of the theoretically based career education intervention over the standard course conducted by the school. The school-based vocational curriculum is a form of Vocational Education and Training (VET), which involves “training in specific skills for specific occupations” (Patton, 2000, p. 37). The aim of the generic vocational course at the school where this study took place was to provide students with the fundamental knowledge and practical skills required in their particular field of interest. For example, the early childhood class group gains work experience in actual child care centres while also covering related topics in their school work such as preparing a resume during English lessons. Another group of students in this Generic group gain construction experience by pouring a concrete slab on a building site while in Mathematics lessons they calculate, for instance, the tiles needed to cover a certain area.

In terms of the career development outcomes measured in the present study, the Generic group did not show the same improvements as those who undertook the theory-based career education intervention. Perhaps the work experience and knowledge gained in the school based vocational curriculum is of specific value with regard to gaining an understanding of the particular fields of study. However, it does not appear to deliver improvements in terms of overall career development. Perhaps the juxtaposing of these two forms of career programming would be of benefit.

Indeed, there have been growing calls in the Australian context for a shift from teaching “occupationally specific skills” (Irving & Raja, 1998, p. 28) to a focus on process skill development (e.g., Kemp, 1997; McCowan & Hyndman, 1998; Queensland Government, 2002). To illustrate, McMahon (1997) lists the following topics as ideal inclusions in career education programming: “the lifelong nature of career development, the range and nature of the influences on career development, processes for coping with the ongoing changes experienced throughout career development and an awareness of the future world of work” (p. 142). It seems the narrow focus of the generic course could have led to the lack of growth in career development in the broader sense. According to Patton (2000), “VET programs aim to provide school-leavers with not only industry-specific skills but also generic competencies that enable them to acquire new skills as they are needed by the changing demands of industry” (p. 37). Perhaps the latter part of this objective was not met by the school based course assessed herein and thus, future programming may need to employ a combination of theory-based career education and VET.

#### *Long Term Outcomes*

There were two assessments of the long term impact of the intervention. First, the immediate post-test outcomes for the “expert” facilitation of the course were compared with of the same group’s outcomes measured 8 and a further 12 weeks later. The second analysis made a comparison between the immediate effect of the intervention when taught by regular teachers and its effect 12 weeks later. In both cases, CM, CI and M were the dependent measures to display significant effects. Students’ CDMSE and R were shown to be unaffected by the intervention either in the short term or the long term.

Thus, Bandura’s (1986) speculation about a temporal lag effect for self-efficacy was not substantiated. Neither do the present findings disprove this notion. Bandura believes that newly acquired efficacy may lead to more interest in the particular domain of behaviour involved (Lent, Brown, & Hackett, 1994). This, in turn, may lead to the investment of more effort into such endeavours and this increased exposure is postulated to precede mastery experiences that would then lead to enhanced efficacy and so on. The present results show no gains in CDMSE were

made at any of the times measured after the course. They also show that students' resolve in their approach to decision-making (R) was unchanged following the course. It seems that the temporal lag effect could only have been reasonably examined if indeed newly acquired efficacy was in evidence. It may be that, since students in this sample did not display more efficacy for career decision-making immediately after the intervention, they did not become more interested in career-related decision-making and therefore, did not apply themselves more in their career decision-making endeavours. Hence, if Bandura's notion about a temporal lag effect is accurate, this may be the reason why students' CDMSE was not enhanced in the long term.

In terms of CM, the analysis of the Expert group's data revealed that females maintained the advances they had made in their attitudes toward career decision-making immediately after the intervention a further 8 weeks later, while males' CM significantly improved during this period. A large effect size was recorded for the gain in males' maturity ( $d = .84$ ). However, both males and females did not maintain these enhanced levels of CM a further 12 weeks later. In the Teacher group, the significant improvement in CM for both males and females at the post-test was also not maintained 12 weeks after the course. These findings appear to further support the notion that career education needs to be more prolonged, integrated and intensive in order to sustain its impact upon students' career development at least in terms of their attitudes toward career decision-making.

Levels of indecision significantly dropped for both males and females eight weeks after the "expert" delivery of the course and this decrease was held for a further 12 weeks. In the Teacher group, the significant drop in CI at the post-test was also maintained for 12 weeks. This finding appears to attest to the long term value of the intervention in helping students to resolve their level of indecision over career-related matters. Perhaps these results provide some evidence for the attainment of one of the objectives of the career education intervention, namely, to help students manage the stress associated with indecision and uncertainty (see Chapter Six). It may be that the course provided the students with the learning experiences they required to take personal control of their choices.

This speculation is tentative, however, because other events could also have contributed to a decrease in indecision. For instance, it is the requirement of the

school that this sample of students settle upon the subjects they wished to select for Years 11 and 12 by the end of their final term of Year 10 in early December. The drop in CI that was maintained for both groups may reflect a resolution toward this important career-related decision point in their lives. Indeed, in a longitudinal study of CI levels of high school students in South Africa, Watson and Stead (1994) found evidence for a “developmental progression in the career decidedness of adolescents ... [in which] transition points in the education system ... exert an influence on the career decision-making of students” (p. 277). More recently, Patton and Creed (2001) suggested that school transition points could explain the complex pattern of certainty scores they found amongst their sample of Australian high school students across Year levels 8 to 12 ( $N = 1,971$ ). Moreover, in a summary paper involving three Australian studies, Hesketh (1998) stated that her research illustrated “the ways in which structures and systems define the career choice process” (p. 407). Hence, it is not possible to determine whether the way in which CI decreased and was maintained for students in the present sample was attributable to the career education intervention that they undertook or whether this was a product of the school driven subject selection requirement around that time. Perhaps a combination of both of these influences was involved.

Finally, the proportion of maladaptive decision coping strategies (M) students reported at the post-test remained the same in the long term for all students. In the case of students in the Teacher group, this was a positive long term outcome since M levels underwent a significant decrease from the pre-test to the post-test. In the case of females in the Expert group, M scores did not change during the first two testing times, and thus their reported use of maladaptive decision coping patterns was not affected both in the short or the long term. The males in the Expert group, however, reported significantly more M immediately following the intervention and this higher level of maladaptation toward decision-making was maintained in the long term.

It appears, therefore, that the teachers were more successful in their efforts to facilitate the use of fewer ineffective decision coping strategies than myself as the “expert” facilitator. Students in the intervention classes taught by teachers reported an abatement in their tendency to leave decisions to others or decide on the spur of the moment as measured by M. This finding again reflects the different way in which the teachers and the career development “expert” may have administered the

intervention. Despite explicit lesson plans and guidelines, the teachers seem to have placed more emphasis on encouraging students to apply themselves to decision-making tasks. Perhaps they placed more importance on the actual decision-making process and promoted the use of effective strategies to get on with the job of settling upon career-related choices. Whereas, with my emphasis on the need for students to expand their career choice options, those in the Expert condition may have continued their use of maladaptive coping patterns because they felt overwhelmed by such broad arrays of options. Maladaptive strategies are described by Janis and Mann (1977) as “cop-out” decision behaviours. Perhaps the thought of more options from which to choose, generated by my particular facilitation of the course, may have prompted a cop-out response, particularly for the males in this condition.

#### *Auxiliary Findings*

The data gathered for this part of Study 3 essentially provided specific feedback about certain aspects of the intervention that required modification. For example, the technical language used in some instances was deemed too “high brow” for these students and the content of the student booklets was also considered too demanding for their general capabilities. The widespread reluctance to engage in activities requiring self reflection and the anti-achievement culture of the school, which were other issues revealed by the scrutiny of this supplementary data, also provided further insight into the characteristics of this particular cohort of students.

In addition, the examination of facilitator interviews and reflexive accounts, the guidance personnel pro formas and student evaluation sheets was undertaken to procure triangulation for the longitudinal findings. This scrutiny of the supplementary evaluative data did indeed provide some supportive evidence for at least two of the inferences made from the survey data. These were, firstly, that the intervention needed to be longer and more intensive. Comments made by the teachers in particular, reinforced the conception that the intervention could have a more marked effect if it were to run over a lengthier and more intensive time period. These comments are also born out in the literature (e.g., Lent, Hackett, & Brown, 1999; Patton & McMahon, 1999; Watts, 1997).

The second inference supported by these supplementary data was that students seemed to display a complacent attitude toward career decision-making. Indeed, the results in terms of the small number of guidance staff pro formas filled out are so insignificant it may seem pointless to even report this aspect of Study 3. However, this level of apathy toward seeking career-related advice or information, which is readily available to the current sample, may inform future career development intervention studies. It serves to highlight the importance of motivating students to engage in career exploration and to seek assistance for themselves. Again, this notion is not new to the literature. For example, Lapan and Kosciulek (2001) listed “motivation and hope” as necessary targets of career development programs in order for adolescents to gain “a special kind of understanding of themselves in relation to the world of work” (p. 5). Likewise, Mann et al. (1989) contended that some adolescents display “a negative or even cynical attitude” (p. 273) about making important choices, and that this can result in low activation. These authors further discussed the “gap between adolescent competence and involvement in decision-making” (p. 273). This implies that at-risk students such as those found with the present sample who display high levels of complacency and resignation to unemployment, may need different interventions to those in other situations. It may be that particular cohorts of adolescents require specific career education initiatives according to the opportunity structure of their community and the combination of demographics impacting upon their career development.

## CHAPTER 8: CONCLUSION

### Overview

This chapter will provide a summary of the research project as a whole. There will be a discussion of the overall conclusions and implications to emerge from the information gleaned prior to, during, and following the three main studies conducted. An account of the limitations of the research will then be presented followed by recommendations for future research. The closing section returns to the fundamental principle of this thesis, which was a commitment to bridging the gap between theory and practice. It should be noted that some portions of the present chapter were taken from another article recently published in a refereed journal (Prideaux, Patton, & Creed, 2002).

### Aims of the Research Project

The research project reported in this thesis had two primary objectives. The first was to test and extend career development theory. This was achieved since nearly all the relationships amongst the key career development variables previously established with adult samples were revealed in the cross sectional study using the present sample of adolescents. In addition, the demographic and contextual characteristics of this adolescent sample were found to exhibit many of the same relationships with the career development variables examined as those reported previously in the literature. This study also extended the theory base by showing how these key constructs related to two measures of decision-making behaviour.

The second major objective of this research project was to devise and evaluate a theoretically derived career education program. This goal was also accomplished. The Career Choice Cycle Course was created through the careful scrutiny of relevant career development literature, context specific qualitative data, and baseline quantitative data. The resultant intervention, despite its brief nature, was found to assist students' career development in a variety of ways. In general, it led to gains in career maturity for females regardless of whether they were taught by a career development "expert" or a regular classroom teacher. However, males' career

maturity was enhanced only if teachers facilitated the intervention. Levels of career indecision and maladaptation toward decision-making were also reduced by the intervention with teacher facilitation. The long term impact of the intervention was found to be generally beneficial, although this was the case at the first follow-up testing time only. Gains were not maintained a further 12 weeks later. In addition, two of the outcome variables assessed were not affected by the intervention. Students' confidence in their ability to make career-related decisions and their resoluteness toward decision-making remained stable in the short and long term.

Apart from these two central aims, the current project also set out to augment past research involving career education intervention evaluations. A mix of qualitative and quantitative methodology, and the use of longitudinal and control group data were some of the design improvements utilized. Thus, the present research attempted to advance the accumulation of evidence in this area since it was deemed to be lacking "methodologically sound career intervention studies carried out in actual high school settings" (Prideaux, Creed, Muller, & Patton, 2000, p. 229).

Two other lesser aims of the current project related to the use of training needs assessment and careful consideration of contextual affordances surrounding the population being studied. It was deemed crucial to gather data that would clearly depict the students themselves so that the findings would be of practical relevance to the participants. It was also considered important to incorporate the study of a variety of situational variables to gain an understanding of how these could be hobbling personal agency within the career choice process of these adolescents. Accordingly, an important goal of the research was to find ways in which career education could buffer students' poor opportunity structure and enhance their career development. These adolescents were deemed likely to have difficulty with career-related decisions due to their disadvantaged circumstances characterised by a history of poor school to work transition, a high incidence of unemployment in the local area, low levels of academic achievement, a general lack of self confidence, and complacency toward career decision-making. Hence, the present research project was committed to the close consideration of context specific data.

### *Overall Conclusions and Implications*

Several broad conclusions emanated from the research project as a whole. The most all-encompassing of these was that career education needs to be given a more central role in the school curriculum. It needs to become an integrated and holistic system of instruction in schools. This has implications for career education curriculum development in Australia, in particular. A coherent, comprehensive, long-term and intensive program, that is integrated into the national curriculum from the early primary school years, and that judiciously develops in scope and focus across the high school years, would be the ideal.

### *Process Skills*

Students clearly need to be equipped with a bevy of skills in order to cope with the state of flux they now face in the new millennium. They no longer simply need career counselling in its past format wherein information about occupations was supplied and a corresponding set of personal characteristics were matched to the most suitable job for the individual. Gathering information about the myriad of jobs now available and gaining an understanding of one's career-related interests are a small part of what is required in today's context. Students now need a great deal of confidence and motivation to explore the job market in much more sagacious and self-directed ways. They need to be able to find out, for instance, which careers are currently overloaded with personnel and try to forecast what particular work skills will be sought in the future. They may even need to be able to surmise what expertise may be needed to secure employment in occupations that are yet to be created. Such deliberate career planning, and wide-ranging information seeking, along with the personal skills necessary to carry them out, are illustrative of the many ways in which career education needs to be transformed to cater for the acquisition of these new skill requirements.

Indeed, educators and policy makers need now to view career education as an integral part of a broader concept involving life skills training for all students. Young people must now possess meta-cognitive career process skills if they are to manage their own careers during this "profound revolution in the nature and structures of

both work and career” (Watts, 1997, p. 36), recently termed the “careerquake” (Watts). Such process skills include self awareness, self reflection, an understanding of self-efficacy for career decision-making, as well as flexibility, persistence, optimism and an ability to make challenging, but realistic plans. The coping skills necessary for dealing with change, indecision, and career set backs are other essential processes required along with a sense of personal responsibility and determination toward one’s own career development. Moreover, contemporary career education must foster an understanding and acceptance of the cyclic nature of career development. Students, and indeed adults, need to be made aware of how career choice processes are likely to recycle via the continuous interplay of individual characteristics, belief systems, behaviour, and the environment.

#### *Realignment of Focus for Career Education*

The career education practices of the past must therefore be superseded and replaced by contemporary practices that have been developed through sound research. Only then can we respond to the needs of today’s youth who are being challenged by an uncertain future. Indeed, career education in today’s context should be aiming to help individuals become “effective, autonomous and competent in our social, political and economic worlds” (Bessant, 2002, p. 48). Furthermore, according to Watts (1997), individuals who accept the need for career renewal, and who develop a capacity for continued personal growth, will be at an advantage in this climate of change. Hence, career education programs must promote the value of lifelong learning and confront the perception that career development finishes when one completes high school. Career education must therefore go beyond the auspices of schools to become a service provided across the life span. This new conception of career education will no doubt be of benefit to the individual. It could also have worthwhile benefits for the nation as a whole since it could produce a more flexible labour market, which may enhance international competitiveness in today’s global world of work (Watts).

The present research findings may lend some empirical impetus to this realignment of focus for career education. It is hoped, for instance, that the small piece of evidence gathered in the present study, which shows the effectiveness of a

theoretically derived career education intervention over the standard VET type of course, may stimulate some changes in future curriculum development in this area. The “piecemeal or fragmented” (Queensland Government, 2002, p. 10) guidance systems currently in place may benefit from an approach that is more comprehensive and empirically focused. Perhaps the career education course evaluated herein will inspire the development of more theoretically based programming. Certainly, if the discourse reviewed in Chapter 2 is credible, this is long overdue. Unfortunately, in a recent paper about youth unemployment in Australia, Bessant (2002) stated that “the rhetoric about the contemporary role of education talks about embracing change ... [but] we tend to hark back to outmoded ‘solutions’ for the new issues we confront” (p. 31). With continued accumulation of findings such as those presented herein, such statements may be given more prominence and stimulate real change.

#### *Career Counsellor Specialists*

Related to this overarching conclusion about the need for fundamental changes in career education, is a need for well-trained, specialist career counsellors. If the present research is reflective of similar high school settings in Australia, guidance personnel are expected to cover a wide variety of counselling situations and, due to the pressing nature of some of these, career counselling tends to take a back seat. It seems that the majority of school guidance officers’ time is presently taken up dealing with immediate problems or dilemmas involving a range of issues from conflict resolution and behaviour management to domestic violence and suicidal ideation. Perhaps the duties of guidance personnel in schools could be separated. Certain counsellors could devote their time to these ongoing, behaviour-related issues while other counsellors with specialist knowledge of career theory, career education curriculum development and career counselling skills could concentrate on the provision of intensive and long-term career guidance and education. These specialist career guidance officers could therefore focus on the ongoing enhancement of students’ career development, which may not present as a conspicuously pressing need, but which would nonetheless have important long term benefits for all students.

*Specific Implications*

In addition to the broad conclusions discussed above, some of the implications to emanate from the present research project entailed specific issues that may require particular attention. The first of these relates to the gender differences uncovered in the study. This led to the conclusion that males and females may need to be given specific instruction on particular aspects of career choice behaviour due to the tendencies of their gender that were reported in the literature and supported by the present research. For instance, males tend to be less flexible in their approach to career planning. Indeed, males in the present study displayed more maladaptive decision coping behaviours and more indecision than females. Hence, it could be made overt to males undertaking future career education that they may need to concentrate on adopting a more flexible attitude in their approach to career development.

Second, the differential way in which students responded to the intervention according to its mode of delivery indicates that a combination of “expert” and teacher facilitation could be more beneficial. Teachers have the advantage of knowing the students well, which enables them to successfully encourage more candid and open communication in small group and class group discussions. Familiarity with their regular teachers also means that students are more likely to actively participate in the lessons and show respect for behaviour management strategies. The career development “expert”, however, may be more cognizant of the key issues to be stressed during career education sessions and thus could bring special expertise to the course. Nevertheless, this finding points to the need for expert training in career development education for teachers.

Many of the findings generated by the studies reported herein indicated support for career-related decisions from students’ families was somewhat lacking. This implies parents could feel removed from this process or they may lack confidence in their ability to be involved. Perhaps parents would welcome some training in career development issues so that they could provide additional guidance in the home. Strategies for modelling sound decision-making behaviour, engendering more optimism toward employment, and cultivating an achievement-oriented approach could be helpful. Parents may also wish to be given information concerning the state

of the world or work as it stands, and as it is anticipated to be in future, in order to be more informed when attempting to support the career development of their children. An understanding of the meta-cognitive career skills required, and instruction on how to access career-related information would also be of likely use to parents.

It was also concluded that there should be more preparation for coping with change. Many of the students examined in this thesis, and particularly the males, seemed to be trying to avoid confronting the circumstances they face by displaying a sense of what I termed “false bravado”. Students in today’s climate of change and uncertainty may benefit from specific training in anxiety management strategies. If the process of openly expressing one’s apprehension, and getting in touch with one’s strengths and weaknesses was normalised, perhaps adolescents’ anxieties could be dealt with in a more direct manner. Students could be taught about the physical and emotional effects of anxiety, and be given practical strategies for coping with them. Armed with this type of information and these coping strategies, adolescents could markedly improve their decision-making approach behaviour.

Finally, and perhaps most disturbingly, the present study revealed a culture of underachievement amongst many of the adolescents investigated that clearly requires immediate and deliberate attention. Parents, educators and counsellors need to find ways to address this situation wherein students have built up a set of values that I will refer to as the “not cool syndrome.” For these young people, it is not favourable to be seen as trying your best academically, or to be giving careful consideration to your future. Too often during the course of the research reported in this thesis, an attitude of complacency toward career decision-making, an indifference toward academic achievement, and a poor work ethic were encountered. If students are to survive in today’s world of work, they will surely need to adopt a much more conscientious and resolute approach both toward career choice behaviour in particular, and academic pursuits in general. Thus, researchers and practitioners need to find ways to encourage students to view effort and hard work as commendable endeavours rather than viewing complacency and apathy as “cool” attributes. This is a dilemma that will require a great deal of research attention in order to try to reverse its damaging effect on students’ career development.

*Recommendations for Future Research*

First and foremost, I would like to suggest that a systematic undertaking of research and program development, implementation and evaluation be adopted in order to provide the best form of career education when it is required either by students or during adulthood. I believe that only through a well-structured and carefully organised program of research that coordinates the efforts of career development “experts” and well informed educators, will the ad hoc approach of the past be left behind.

Unfortunately, career development researchers and career practitioners can become caught up with the many complex demands of their respective endeavours. Researchers tend to actively follow lines of investigation, theorising, testing and re-testing in the quest for a better understanding of career development. Many valuable models, constructs and assessment tools have been devised although many of the samples used have not been drawn from the “real world”. In contrast, those in the vanguard of career education, career counselling, and curriculum policy development press on with the aim of assisting people in a variety of circumstances with a range of concerns across diverse career paths. These professionals have extensive hands-on knowledge but tend to overlook theoretical findings that could bring elucidation, coherence and organisation to their work. Indeed, Savickas (1995) cited research to support “the belief that theory is little used by practitioners” (p. 2).

Despite there being an upsurge in demands for high-quality career development services (see Chapter 2), moves to do research in the field to enhance practice, and vice versa, have only just begun. I contend that, if researchers were to forge closer links between theory and practice, they would be better placed to “keep up” with the malleable nature of careers in the current context. Indeed, theory must offer insight into clients' situations (Collin, 1996) and theorists may also need to learn how to “draw a different map” (Krumboltz, 1994, p. 16) since “the terrain is changing, and the old maps are no longer appropriate to guide practitioners through it” (Collin, p. 76). Researchers must immerse their work in the field to examine context specific processes, and the skills required to navigate them, so that career development theorising and consequently, more suitable career education curricula, will ensue.

Whilst advocating this macro approach, whereby research and practice operate in parallel, there are many other suggestions that have emanated from the present research project. These could be followed in order to firstly, advance theory building in this area, and secondly, to determine the practical impact of certain pedagogical stratagem for career education. It seems, for instance, that programs attempting to enhance career decision-making self-efficacy should be conducted over an extended period. The assessment of such programs will need to be undertaken well beyond the completion of them in order to adequately test Bandura's (1987) speculation about a temporal lag effect (see Chapter 7). Indeed, according to McWhirter, Rasheed, and Crothers (2000), many of the outcomes of career interventions "cannot be assessed immediately after completion of programs; rather, they require long-term follow-up" (p. 330). No doubt systematic longitudinal assessment of a variety of career development variables is warranted given the paucity of such information to date.

In addition, the construction and validation of better outcome measures for career education program evaluation seems warranted. For instance, it is important to devise tools, which could accurately tap more contemporary indicators of career maturity such as adaptability, flexibility, persistence and resilience. Certainly Savickas (1997) has maintained that the construct of "adaptation offers the greatest potential for ... generating explanatory principles and new hypotheses" (p. 257). Notwithstanding this, valid and reliable indicators of the worth of career education programming are needed. These could be in the traditional paper and pencil format but other techniques could also be created. Perhaps hits on school career information Internet sites could be recorded for each student, for instance. Novel qualitative or anecdotal data gathering techniques could also be formulated to support self-report data. These suggestions are in accord with Kidd and Killeen (1992) who advocated "an elaboration of the range of outcomes ... [to include measures of] executive skills and purposeful attitudes and behaviour" (p. 230).

More research on the construct of career indecision is also warranted. It now seems important to discover if and why some people suffer from the adverse effects of a trait-based characteristic involving chronic indecisiveness. Indeed, Osipow (1999) suggests we need to "think further about the design of interventions to deal with indecisiveness as opposed to indecision" (152). I would like to suggest that in addition to this, future research efforts should also try to find out more about

indecision in its temporary form. It seems pertinent to know why some students, for example, become overly anxious or try to mask their sense of indecision rather than accept it as a normal part of the career development process. Leong and Chervinko (1996) proposed that career indecision is connected with “an unrealistic fear of the negative consequences that may result from their decisions” (p. 325). I believe it is important to determine if such speculation is verifiable.

The present findings may also be illustrative of a constraints model of decision-making (Mann & Friedman, 1999) whereby adolescents faced with frustration over important decisions use an “emotive decision rule ... [such as] ‘quit and drop everything’ (‘spit the dummy’ rule)” (p. 243). Further longitudinal studies are required to investigate this notion. It would be pertinent, for example, to explore whether those with more career options under consideration tended to employ more cop out strategies as compared to the coping strategies utilized by adolescents who have perhaps just two alternative career options from which to choose.

With regard to future investigation of specific pedagogical stratagem, the present study provides inspiration for a variety of procedures that could be further evaluated. The gender differences discovered in terms of students’ response to the intervention, for instance, suggests that future research could seek to determine the best means by which males and females could be assisted according to their relative needs. In addition, there were some findings that revealed a connection between poor career outcomes for certain children according to the characteristics of their parents. For example, mothers’ level of education was associated with levels of their children’s efficacy for decision-making, and having both parents unemployed was associated with levels of career indecision. This indicates that particular groups of students may need special attention and thus, should be the ones targeted in future research endeavours designed to assist individuals at risk of experiencing difficulty making the transition from school to work.

The need for the assessment of many other specific strategies came to light during the present research project. It would seem pertinent to find out more about the effect of models on students’ career development, for instance. The extent to which parents, peers and indeed, outsiders, influence the choices and career-related behaviours of young people certainly warrant further attention. It would be interesting to determine if, for example, contact with highly motivated past students,

who had experienced success after leaving school despite many setbacks, would impact upon adolescents. These students could highlight the difficulties they faced upon leaving school, and the amount of persistence required to finally gain employment. This type of research is needed because previous studies have usually assessed college samples and not students in the field (e.g., Luzzo et al., 1996). Moreover, the best way in which to deliver career education could also be examined. Determining the best combination of teaching and counselling staff in terms of outcomes for students would be deserving of attention. Likewise, the evaluation of parent programs to assist their child's career development would also warrant future research attention.

In summary, since a vital component of career development in the present context is the need to expand upon, and continually revise the career options under consideration (Blustein, 1997; Brown & Lent, 1997; Irving & Raja, 1998; O'Brien, Dukstein, Jackson, Tomlinson, & Kamatuka, 1999), students must become more accustomed to complex and ongoing decision-making. There is a need now to move away from "linear thinking ... [to] more cyclical thinking" (Subick & Simonson, 2001, p. 257). Hence, future research will need to examine ways in which students can be induced to embrace this cyclic notion of career development and accept its complexities without trepidation. Young people today need to be provided with the skill building necessary for them to be confident and resolute in their approach to the complexity of choices they are faced with. Career education intervention that would preclude students from forming a pessimistic view of career opportunity, and guard against the incidence of frustration, excessive anxiety, and/or complacency over their predicament in today's world of work, is imperative.

### *Limitations*

A detailed account of the limitations of the present research project was presented in Chapter 1. It provided a discussion of many of the methodological shortcomings common to research of this nature, however, other methodological issues evolved subsequent to the research. For example, whilst reporting the findings of Study 1, it became apparent that the qualitative data gathering and content analysis undertaken for the project could be subject to bias since the same researcher

conducted the interviews and analysed the transcriptions. There is also reason to be cautious in the acceptance of findings generated by the self-report survey data, which formed a large part of the evidence gathered in the present course evaluation. The low reliability of the Competence subscale of the career maturity instrument used (see Chapter 5), for instance, was indicative of one of the problems associated with such tools. Teachers reported that many of the students who completed the surveys found this section too laborious to read, and therefore, tended to rush through their responses to these more lengthy questions.

The scales chosen for the surveys were selected because of their extensive use in the literature as well as their strong validity evidence. Nevertheless, some of them did not translate ideally to the present sample. Future studies therefore need to take this into consideration. Researchers must be aware of the limitations of such instruments with “at-risk” groups such as the students described in this thesis who generally exhibited low academic achievement and poor reading ability. Secondly, scales developed for American samples should be used with caution when applied to other cultures. Research involving the modification of the instruments used in the present study and the development of other constructs more suited to specific groups will be important avenues to pursue in further studies.

Although it is clear that future research needs to carefully examine career education curriculum development and evaluation with participants’ needs driving the enterprise, the specific limitations of this situated approach should also be given careful consideration. Throughout the present research project, I undertook to produce a reflexive account of the ongoing issues and problems raised by my contemplation of the research in progress. What follows is a summary of this information concerning applied research, as well as a recapitulation of the literature, which serve to highlight both the advantages of theoretically based program development as well as the constraints of field settings.

### *Limitations of Applied Research*

Many authors have presented strong arguments for the amendment of the schism between theory and practice (e.g., Collin, 1996; McDaniels & Gysbers, 1992; Savickas & Walsh, 1996). Indeed, one author endorsed “giving psychology away ...

[to make] the insights and tools of vocational psychology directly available to clients for their active use” (Borgen, 1991, p. 279). Another criticised the career development literature for its over concern with “the objective rather than the subjective career” (Collin & Young, 1986, p. 841). Savickas (1995) emphasised the need for more “research that rigorously contextualizes vocational behavior” (p. 28). Statements about the potential for practice to inform theory are also common. For instance, “situated activity, particularly the practice of career intervention, constructs the true meaning of career theories” (Collin, p. 74).

It is germane to put theory into practice and thereby discover ways in which practice can inform theory. Career education in Australia is in urgent need of this since career programs in this country have largely been characterised by a “band aid” approach (Prideaux, Creed, Muller & Patton, 2000). Often formulated to address immediate needs, they are hastily put together, unsystematic (McMahon, 1997) and generally atheoretical (Hansen, 1999). This type of career education programming tends to bring disorder to the field. In addition, career education in Australia is “peripheral to, rather than an integral part of, the school curriculum” (McMahon, p. 137) and thus, is not given the attention that it deserves.

Although these arguments are compelling, it is easier said than done. Schools are very busy places and teachers are striving to cope with an ever increasing number of roles and duties. The curriculum is crowded and students are responding in a variety of challenging ways to the “emergent realities of the new careers era” (Carpenter & Inkson, 1999, p. 29). Researchers, on the other hand, are constrained by the requisites of sound methodology. In order to apply and test theory properly, experimental conditions, or conditions as stringent as possible, need to be adhered to. It is an onerous task to fit a sound research design into an actual school setting. There are many practical limitations, including time tabling restrictions, unexpected events, and difficulties related to the acquisition of parental consent. In addition, students' career counselling needs are constantly changing and some students lack the motivation to become involved in career-related endeavours because they see them as too distant to be of personal consequence.

Undoubtedly, research in the “real world” that attempts to abide by the confines of sound methodology is, at the very least difficult, and sometimes impossible. A field setting populated by wholly willing and committed participants is

uncommon. If one is retained, a series of other nuances with regard to the difficulties of situated research may arise. For instance, those who have the responsibility to time-table lessons, staff, students, rooms and special events in an atmosphere of diverse curricula and close community involvement know that it is an extremely unruly chore. In this context, a research project is yet another string to the bow but can also be seen as yet another task on an ever growing list of extra expectations that can be overlooked. Unfortunately, even after all the time tables were successfully manipulated and the relevant staff members were successfully recruited, unforeseen events emerged during the course of the present project. For example, an excursion away from the school took place without prior notice and thus one lesson had to be rescheduled. In addition, an unexpected event involving vaccinations with a visiting government nurse occurred, which pulled students out of class without warning. Indeed, a significant unforeseen dilemma that I experienced concerned the promotion of the principal who was ostensibly the “gatekeeper” for the present research. Hence, half way through the project I had to gain backing from a new principal with a different perspective on career programs and research in schools.

I have presented but a few of the practical problems encountered during the project. Clearly, schools are difficult environments in which to conduct research and the control of confounding variables can be an ever present challenge despite meticulous design and planning. Many valuable lessons were learned from this attempt at career development research conducted in a school setting. The methodology employed was deemed as tight as possible given the restrictions placed upon the project. However, I acknowledge that certain aspects could be improved in future attempts. Consultation with staff was one issue raised retrospectively. The level of collaboration between researcher and practitioners, in this case teachers, may have been too one sided. Although very busy with their regular duties, the teachers voiced a desire to have more input into the earlier planning stages of the project.

### *Reflections on Evaluation*

Just as important as designing career education programs that encompass contextual data and sound theoretical underpinnings, is the systematic and meaningful evaluation of them. I felt that the monitoring processes employed in the

present study were inadequate. Sound evaluative methodology is vital so that control over alternative explanations is maintained and inferences about the outcomes of the program may be confidently drawn (Prideaux et al., 2000). In this way, theory can be extended in an efficient and productive manner. Furthermore, if the measurement instruments utilized are reliable and fortified by strong psychometric support, replication studies may be carried out and provide further opportunities for theory to be extended and validated. Yet another advantage pertains to financial support for such endeavours. If robust techniques are in place to accurately assess the worth of career education initiatives, demonstrated benefits are more likely to be ratified by those in control of government funding (McMahon, 1997). Nevertheless, it is important not to lose sight of the fact that it is the students for whom career education programming is designed who should ultimately benefit.

Innovative and more effective ways of assessing how well students fare as a result of career education need to be developed. The establishment of dependent variables that more closely reflect the goals of career education interventions may be warranted. Teachers know that for evaluation to be of use it must be closely tied to the aims of each lesson as well as the objectives of the entire program. Career programming should therefore draw upon teachers' knowledge to establish clear aims and to devise suitable evaluative strategies.

As mentioned previously, the teachers who supervised the administration of the surveys, stressed an aversion to one of the instruments within them since it involved a lot of reading on the part of the respondents. Had the teachers been given the opportunity to be involved in the choice of outcome measures, I believe more appropriate instruments would have been employed. Indeed, given their extensive experience with program planning and evaluation, earlier consultation with teachers may have afforded the provision of novel and more practical assessment strategies. Also, in relation to outcome measures, a more sophisticated mode of manipulation check could have been adopted. Perhaps the collection of anecdotal data pertaining to specific career choice behaviour (e.g., subject selection) would have provided better triangulation for the survey data.

*Reflections on Program Development*

Each of the lesson plans, as well as the accompanying Teachers' Guide and student activity booklets, took form with relative ease since the strong theoretical basis provided by the social cognitive career theory (SCCT) choice model afforded clear direction for its composition. The accrued evidence of this theoretical foundation also guided program development in an applied sense. For example, Luzzo, Funk, and Strang's (1996) use of an attributional retraining video to modify career decision-making self-efficacy prompted me to try to incorporate this into the course design. Volunteers from the school community were difficult to recruit for this, however, and time constraints led to the taping of just one past student for this exercise. Another piece of the SCCT literature to provide inspiration for the course came from Brown and Lent's (1996) work on foreclosed occupational paths. I drew upon their suggestions for counselling clients to overcome choice barriers. In addition to SCCT, I drew heavily on Patton and McMahon's (1999) work, which I simplified for student's consumption. The resultant model explaining influences on career choice was generally well accepted. The lesson I devised based on the GOFER decision-making strategy (Mann et al., 1988) was less well received, however, as students found it too painstaking.

Due to the considerable body of established SCCT literature, the selection of course content was a relatively straightforward task. The only difficulty associated with designing the course around this theoretical framework was that there were considerably more ideas generated by my scrutiny of the literature than available time in which to conduct the course. Indeed, given the breadth and depth of this theoretical foundation, I could conceivably have produced a career education program for an entire school year. The brief nature of the intervention thus became a weakness of the present study. The Career Choice Cycle Course was designed specifically with the intention of being comprehensive in terms of its coverage of career choice issues. Consequently, it was not possible to devote ample time and energy to any of the specific aspects involved. It should be noted, however, that the effects that were revealed (see Chapter 7) auger well for the outcomes of a prolonged course with a similar framework.

### *Conclusion*

This thesis has described one attempt to develop a theoretically derived, research driven career education course. The central focus has been an appeal to incorporate theory into practice in order to activate the complementary process of practice informing theoretical advancement. Whilst arguing for this merger of theory and practice, I have also acknowledged some of the methodological difficulties I faced during the research project. I trust that others who attempt situated research in future may learn from the pitfalls I encountered. It is also my hope that the range of qualitative, cross-sectional and longitudinal data gathered for the design and evaluation of the course described herein, will serve to inform theory building and future research projects of this nature.

A strong commitment to theory based program development has been born out by this exercise for me. It was my aim to carefully identify the context specific needs of the recipients of the intervention and then to find the most appropriate theoretical acumen to ensure a coherent and well-structured approach to the situation. I set out to put theory to the test in the real sense, to see if all the conjecture could really benefit those for whom science is ultimately geared to serve. It was my bid to move toward breaking the theory/practice dichotomy. I strongly believe theory can chart career development behaviour and in turn, people can inform theory through their direct contact with theoretically derived programs.

The theory and practice of career development are ripe for amalgamation. There have been warnings about the problems that ensue when “counselors do not publicly describe their practices and scientists write but rarely counsel” (Spokane, 1991, p. 4). In addition, according to Collin (1996), practitioners continue to apply outdated theories that “have become taken for granted and embedded in the syllabus” (p. 75). Research building has clearly reached a stage where more consistent collaboration with practitioners would complement and enhance its progress. It is recommended that those at the “coalface”, in conjunction with career development theorists and researchers, adopt a more organised and better informed approach to the creation, testing and continual redevelopment of career education that exhibits worthwhile outcomes for today's youth.

## REFERENCES

- Ainley, J. (1998). School participation, retention and outcomes. In Dusseldorp Skills Forum (Ed.), *Australia's youth: Reality and risk* (pp. 52-65). Melbourne: CEAV.
- Albion, M. J. (2000). Career decision-making difficulties of adolescent boys and girls. *Australian Journal of Career Development, 9*(2), 14-19.
- Alderton, S., & Muller, J. (2000). Working, studying and parenting: Multiple roles and role strain. *Australian Journal of Career Development, 9*(2), 38-43.
- Anderson, S., & Brown, C. (1997). Self-efficacy as a determinant of career maturity in urban and rural high school seniors. *Journal of Career Assessment, 5*, 305-315.
- Arbuckle, J. L., & Wothke, W. (1995). *Amos 4.0 User's Guide*. Chicago: Small Waters Corp.
- Australian Bureau of Statistics. (1997). *Transition from education to work*. Australia: Cat. No. 6227.0.
- Australian Bureau of Statistics. (2000). *Regional statistics Queensland*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2001). *Census of population and housing*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2002). *Year book Australia 2002: Labour, persons unemployed*. Retrieved January 10, 2003, from <http://www.abs.gov.au/ausstats>.
- Australian Education Council Review Committee. (1991). *Young people's participation in post-compulsory education and training*. Canberra: Australian Government Publishing Service.
- Baker, S. B., & Taylor, J. G. (1998). Effects of career education interventions: A meta-analysis. *The Career Development Quarterly, 46*, 376-385.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Bandura, A. (Ed.). (1995). *Self-efficacy in changing societies*. Cambridge: Cambridge University Press.
- Bergeron, L. M., & Romano, J. L. (1994). The relationships amongst career decision-making self-efficacy, educational indecision, vocational indecision, and gender. *Journal of College Student Development, 35*, 19-35.

- Berry, J. M., & West, R. L. (1993). Cognitive self-efficacy in relation to personal mastery and goal setting across the life span. *International Journal of Behavioral Development, 16*, 351-379.
- Bessant, J. (2002). Risk and nostalgia: The problem of education and youth unemployment in Australia-a case study. *Journal of Education and Work, 15*(1), 31-51.
- Betz, N. E. (1992). Counseling uses of career self-efficacy theory. *The Career Development Quarterly, 41*, 22-26.
- Betz, N. E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of Counseling Psychology, 28*, 399-410.
- Betz, N. E., & Hackett, G. (1983). The relationship of mathematics self-efficacy expectations to the selection of science-based college majors. *Journal of Vocational Behavior, 23*, 329-345.
- Betz, N. E., & Hackett, G. (1986). Applications of self-efficacy theory to understanding career choice behavior. *Journal of Social and Clinical Psychology, 4*, 279-289.
- Betz, N. E., & Klein, K. L. (1996). Relationships amongst measures of career self-efficacy, generalized self-efficacy, and global self-esteem. *Journal of Career Assessment, 4*, 285-298.
- Betz, N. E., & Luzzo, D. A. (1996). Career assessment and the Career Decision-Making Self-Efficacy scale. *Journal of Career Assessment, 4*, 413-428.
- Betz, N. E., & Voyten, K. (1997). Efficacy and outcome expectations influence career exploration and decidedness. *The Career Development Quarterly, 46*, 179-189.
- Betz, N. E., Harmon, L. W., & Borgen, F. H. (1996). The relationships of self-efficacy for the Holland themes to gender, occupational group membership, and vocational interests. *Journal of Counseling Psychology, 43*, 90-98.
- Betz, N. E., Klein, K., & Taylor, K. M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy scale. *Journal of Career Assessment, 4*, 47-57.
- Bingham, W. C. (2001). Donald Super: A personal view of the man and his work. *International Journal for Educational and Vocational Guidance, 1*, 21-29.
- Blustein, D. L. (1989). The role of goal instability and career self-efficacy in the career exploration process. *Journal of Vocational Behavior, 35*, 194-203.
- Blustein, D. L. (1997). A context-rich perspective of career exploration across the life roles. *The Career Development Quarterly, 45*, 260-274.

- Blustein, D. L. (1999). A match made in heaven? Career development theories and the school-to-work transition. *The Career Development Quarterly*, 47, 348-352.
- Bordin, E. S. (1990). Psychodynamic model of career choice and satisfaction. In D. Brown, & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 102-144). San Francisco: Jossey-Bass.
- Borgen, F. H. (1991). Megatrends and milestones in vocational behavior: A 20-year counseling psychology retrospective. *Journal of Vocational Behavior*, 39, 263-290.
- Borgen, F. H. (1992). Expanding scientific paradigms in counseling psychology. In S. D. Brown, & R. W. Lent (Eds.), *Handbook of counseling psychology* (2nd ed., pp. 111-140). New York: Wiley.
- Brisbin, L. A., & Savickas, M. L. (1994). Career indecision scales do not measure foreclosure. *Journal of Career Assessment*, 2, 352-363.
- Brown, D. (1990). Summary, comparison, and critique of the major theories. In D. Brown, & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 338-363). San Francisco: Jossey-Bass.
- Brown, D. (1996). Status of career development theories. In D. Brown, & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 513-525). San Francisco: Jossey-Bass.
- Brown, D. (2000). Theory and the school-to-work transition: Are the recommendations suitable for cultural minorities? *The Career Development Quarterly*, 48(4), 370-375.
- Brown, D., & Brooks, L. (Eds.). (1996). *Career choice and development* (3rd ed.). San Francisco: Jossey-Bass.
- Brown, C., Darden, E. D., Shelton, M. L., & Dipoto, M. C. (1999). Career exploration and self-efficacy of high school students: Are there urban/suburban differences? *Journal of Career Assessment*, 7, 227-237.
- Brown S. D., & Lent, R. W. (1996). A social cognitive framework for career choice counseling. *The Career Development Quarterly*, 44, 354-366.
- Carpenter, H., & Inkson, K. (1999). New career paradigms and personal aspirations: A study of seventh formers. *Australian Journal of Career Development*, 8(3), 23-30.
- Chartrand, J. M., & Rose, M. L. (1996). Career interventions for at-risk populations: Incorporating social cognitive influences. *The Career Development Quarterly*, 44, 341-353.

- Chartrand, J. M., Martin, W. F., Robbins, S. B., McAuliffe, G. J., Pickering, J. W., & Calliotte, J. A. (1994). Testing a level versus an interactional view of career indecision. *Journal of Career Assessment, 2*, 55-69.
- Church, A. T., Teresa, J. S., Rosebrook, R., & Szendre, D. (1992). Self-efficacy for careers and occupational consideration in minority high school equivalency students. *Journal of Counseling Psychology, 39*, 498-508.
- Clayton, I., & Fletcher, J. (1994). Are realistic types really less career mature?: Year 10 differences in career maturity between Holland's work personality types. *Australian Journal of Career Development, 3*(1), 29-34.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Collin, A. (1996). Re-thinking the relationship between theory and practice: Practitioners as map-readers, map-makers---or jazz players? *British Journal of Guidance and Counselling, 24*, 67-81.
- Collin, A., & Young, R. A. (1986). New directions for theories of career. *Human Relations, 39*, 837-853.
- Coon-Carty, H. M. (1995). *The relation of work-related abilities, vocational interests, and self-efficacy beliefs*. Unpublished doctoral dissertation, Loyola University, Chicago.
- Creed, P. A., & Patton, W. (In press). Differences in career attitude and career knowledge for high school students with and without paid work experience. *Journal of Career Development*.
- Creed, P., Machin, M. A., & Nicholls, P. (1998). Personal effectiveness training for unemployed people: Where to now? *Australian Journal of Career Development, 7*, 30-34.
- Crites, J. O. (1978a). *Career Maturity Inventory*. Monterey, CA: McGraw-Hill/CTB.
- Crites, J. O. (1978b). *Theory and research handbook for the Career Maturity Inventory* (2nd ed.). Monterey, CA: McGraw-Hill/CTB.
- Crites, J. O. (1995). *Career Maturity Inventory source book*. Monterey, CA: McGraw-Hill/CTB.
- Crites, J. O., & Savickas, M. L. (1995). *Career Maturity Inventory: Source book*. Clayton, NY: Careerware.
- Dawis, R. V. (1992). The individual differences tradition in counseling psychology. *Journal of Counseling Psychology, 39*, 7-19.
- Dawis, R. V., & Lofquist, L. H. (1984). *A psychological theory of work adjustment: An individual differences model and its application*. Minneapolis: University of Minnesota Press.

- Delahaye, B. L. (2000). *Human resource development: Principles and practice*. New York: John Wiley & Sons.
- Department of Education, Employment, Training and Youth Affairs (DEETYA). (1995). *Australia's workforce 2005: Jobs for the future*. Australia: Commonwealth of Australia Publications.
- Dixon, K. (2001). Working together to improve vocational and career opportunities for students: How do schools create meaning for VET? *Australian Journal of Career Development, 10*(1), 21-24.
- Drummond, R. J. & Hansford, S. G. (1992). Career aspirations of pregnant teens. *Journal of Employment Counseling, 29*, 166-171.
- Dumbrell, T. (2000). *Measuring the outcomes of vocational education and training*. Kensington Park, South Australia: National Centre for Vocational Education Research.
- Dusseldorp Skills Forum. (1998). *Australia's youth: Reality and risk*. Melbourne: Australian Council for Educational Research.
- Fan, C., & Antoine, E. (1999). Predictors of employment destinations for university graduates. *Australian Journal of Career Development, 8*(2), 17-24.
- Felton, R.B. (1990). Comparison processes in parents' and children's appraisals of academic performance. *Social Psychology Quarterly, 53*, 264-273.
- Flesch, R. (1948). A new readability yardstick. *Journal of Applied Psychology, 32*, 221-233.
- Flores, L. Y., & O'Brien, K. M. (2002). The career development of Mexican American adolescent women: A test of social cognitive career theory. *Journal of Counseling Psychology, 49*(1), 14-27.
- Ford, D. (1987). *Humans as self-constructing living systems*. Hillside, NJ: Erlbaum.
- Foss, C. J., & Slaney, R. B. (1986). Increasing nontraditional career choices in women: Relation of attitudes toward women and responses to a career intervention. *Journal of Vocational Behavior, 28*, 191-202.
- Frayne, C. A., & Latham, G. P. (1987). Application of social learning theory to employee self-management of attendance. *Journal of Applied Psychology, 72*, 387-392.
- Friedman, I. A., & Mann, L. (1993). Coping patterns in adolescent decision making: An Israeli-Australian comparison. *Journal of Adolescence, 16*, 187-199.
- Fukuyama, M. A., Probert, B. S., Neimeyer, G. J., Nevill, D. D., & Metzler, A. E. (1988). Effects of DISCOVER on career self-efficacy and decision making of undergraduates. *The Career Development Quarterly, 37*, 56-62.

- Gati, I., Krausz, M., & Osipow, S.H. (1996). A taxonomy of difficulties in career decision making. *Journal of Counseling Psychology, 43*, 510-526.
- Gati, I., Osipow, S. H., & Fassa, N. (1994). The scale structure of multi-scale measures: Application of the split-scale method to the Task-Specific Occupational Self-Efficacy scale and the Career Decision-Making Self-Efficacy scale. *Journal of Career Assessment, 2*, 384-397.
- Gianakos, I. (1995). The relation of sex role identity to career decision-making self-efficacy. *Journal of Vocational Behavior, 46*, 131-143.
- Gianakos, I. (1999). Patterns of career choice and career decision-making self-efficacy. *Journal of Vocational Behavior, 54*, 244-258.
- Gillespie, D., & Hillman, S. B. (1993). Impact of self-efficacy expectations on adolescent career choice. Paper presented at the *Annual Meeting of the American Psychological Association* Toronto, Canada: EDRS.
- Gillies, R. M., McMahon, M. L., & Carroll, J. (1998). Evaluating a career education intervention in the upper elementary school. *Journal of Career Development, 24*, 267-287.
- Gloria, A. M., & Hird, J. S. (1999). Influences of ethnic and nonethnic variables on the career decision-making self-efficacy of college students. *The Career Development Quarterly, 48*, 157-174.
- Goble, D. (2001). The relationship between Holland's occupational types and 16PF global factor scores amongst university students. *Australian Journal of Career Development, 10*(2), 21-27.
- Goddard, R., Simons, R., & Patton, W. (2000). The vocational interests of 'white collar' workers experiencing unemployment after compulsory redundancy. *Australian Journal of Career Development, 9*(2), 32-37.
- Gool, S., & Patton, W. (1999). Career aspirations of young Aboriginal women. *Australian Journal of Career Development, 8*(1), 26-31.
- Gottfredson, G. D., & Holland, J. L. (1996). *Dictionary of Holland occupational codes* (3rd ed.). Odessa, Fla.: Psychological Assessment Resources.
- Gottfredson, L. S. (1985). Role of self-concept in vocational theory. *Journal of Counseling Psychology, 32*, 159-162.
- Gregory, R. J. (1996). *Psychological testing: History, principles, and applications* (2nd ed.). Boston: Allyn & Bacon.
- Guerra, A. L., & Braungart-Rieker, J. M. (1999). Predicting career indecision in college students: The roles of identity formation and parental relationship factors. *The Career Development Quarterly, 47*, 255-266.

- Hackett, G. (1985). Role of mathematics self-efficacy in the choice of math-related majors of college women and men: A path analysis. *Journal of Counseling Psychology, 32*, 47-56.
- Hackett, G. (1995). Self-efficacy in career choice and development. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 232-258). Cambridge: Cambridge University Press.
- Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior, 18*, 326-339.
- Hackett, G., & Betz, N. E. (1995). Self-efficacy and career choice and development. In J. E. Maddux (Ed.), *Self-efficacy, adaptation, and adjustment: Theory, research, and application* (pp. 249-280). New York: Plenum Press.
- Hackett, G., & Lent, R. W. (1992). Theoretical advances and current inquiry in career psychology. In S. D. Brown, & R. W. Lent (Eds.), *Handbook of counseling psychology* (2nd ed., pp. 419-451). New York: Wiley.
- Hackett, G., Betz, N. E., O'Halloran, M. S., & Romac, D. S. (1990). Effects of verbal and mathematics task performance on task and career self-efficacy and interest. *Journal of Counseling Psychology, 37*, 169-177.
- Hackett, G., Lent, R. W., & Greenhaus, J. H. (1991). Advances in vocational theory and research: A 20 year retrospective. *Journal of Vocational Behavior, 38*, 3-38.
- Hall, D. T. (1992). Career indecision research: Conceptual and methodological problems. *Journal of Vocational Behavior, 41*, 245-250.
- Hansen, L. S. (1999). Beyond school to work: Continuing contributions of theory and practice to career development of youth. *The Career Development Quarterly, 47*, 353-358.
- Haraburda, E. M. (1998). *The relationship of indecisiveness to the five factor personality model and psychological symptomology*. Unpublished doctoral dissertation, Ohio State University, Columbus, OH.
- Heppner, P. P., Casas, J. M., Carter, J., & Stone, G. L. (2000). The maturation of counseling psychology: Multifaceted perspectives, 1978-1998. In S. D. Brown, & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 3-49). New York: John Wiley & Sons, Inc.
- Herr, E. L. (1997). Space approach and its outlook for refinement. *The Career Development Quarterly, 45*, 238-246.
- Herr, E. L. (1999). Theoretical perspectives on the school-to-work transition: Reactions and recommendations. *The Career Development Quarterly, 47*, 359-364.

- Herr, E. L. (2000). Collaboration, partnership, policy, and practice in career development. *The Career Development Quarterly*, 48(4), 293-300.
- Herr, E. L., & Cramer, S. H. (1996). *Career guidance and counseling through the lifespan: Systematic approaches* (5th ed.). New York: Harper Collins.
- Hesketh, B. (1996). Status quo effects in decision-making about training and career development. *Journal of Vocational Behavior*, 48, 324-338.
- Hesketh, B. (1998). Careers advice and tertiary decision-making "downunder" in Australia. *Journal of Vocational Behavior*, 52, 396-408.
- Hesketh, B., & Whiteley, S. (1995). Students' perceptions of help received during the tertiary admissions process. *Australian Journal of Career Development*, 4(3), 64-69.
- Hill, R. B., & Rojewski, J. W. (1999). Double jeopardy: Work ethic differences in youth at risk of school failure. *The Career Development Quarterly*, 47, 267-279.
- Hill, T., Smith, N., & Mann, M. (1987). Role of efficacy expectations in predicting the decision to use advanced technologies: The case of computers. *Journal of Applied Psychology*, 72, 307-313.
- Holland, J. L. (1985). *Making vocational choices: A theory of vocational personalities and work environments*. Englewood Cliffs, NJ: Prentice-Hall.
- Holland, J., Gottfredson, G., & Power, P. (1980). Some diagnostic scales for research in decision-making and personality: Identity, information, and barriers. *Journal of Personality and Social Psychology*, 39, 1191-1200.
- Hosking, K., & Athanasou, J. (1997). Do vocational interest types affect job satisfaction in adult career development?: A study of unskilled workers in Australia. *Australian Journal of Career Development*, 6(2), 21-25.
- Irving, B. A., & Raja, S. (1998). Career education in a changing world of work. *Australian Journal of Career Development*, 7, 28-31.
- Janis, I. L., & Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice and commitment*. New York: Free Press.
- Jones, L. (1989). Measuring a three-dimensional construct of career indecision amongst college students: A revision of the Vocational Decision Scale - The Career Decision Scale. *Journal of Counseling Psychology*, 36, 477-486.
- Keevers, K., & Bradley, G. (1999). Clarification of students' career interests and its effect on self-concept. *Australian Journal of Career Development*, 8(2), 35-40.
- Kemp, D. (1997). Career counselling, vocational pathways and the role of the school. *Principal Matters*, 8, 14-18.

- Kemp, D. (1998). *A report on youth affairs*. Canberra, ACT: Australian Government Publisher.
- Kidd, J. M., & Killeen, J. (1992). Are the effects of career guidance worth having? Changes in practice and outcomes. *Journal of Occupational and Organizational Psychology*, *65*, 219-234.
- Kolb, D. A. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice Hall.
- Kortas, L., Neimeyer, G. J., & Prichard, S. (1992). Structure and style in career decision making. *Journal of Career Development*, *18*, 199-213.
- Kraus, L. J., & Hughey, K. F. (1999). The impact of an intervention on career decision-making self-efficacy and career indecision. *Professional School Counseling*, *2*, 384-390.
- Krumboltz, J. D., Mitchell, A. M., & Jones, G. B. (1976). A social learning theory of career selection. *The Counseling Psychologist*, *6*, 71-80.
- Lapan, R. T., & Kosciulek, J. F. (2001). Toward a community career system program evaluation framework. *Journal of Counseling and Development*, *79*, 3-15.
- Larson, L. M., & Majors, M. S. (1998). Applications of the Coping with Career Indecision instrument with adolescents. *Journal of Career Assessment*, *6*, 163-179.
- Lenox, R. A., & Subich, L. M. (1994). The relationship between self-efficacy beliefs and inventoried vocational interests. *The Career Development Quarterly*, *42*, 302-313.
- Lent, R. W. (2001, September 21). *Test the model?* E-mail to L. Prideaux (prido@austarnet.com.au).
- Lent, R. W., & Hackett, G. (1987). Career self-efficacy: Empirical status and future directions. *Journal of Vocational Behavior*, *30*, 347-382.
- Lent, R. W., & Hackett, G. (1994). Sociocognitive mechanisms of personal agency in career development: Pantheoretical prospects. In M. L. Savickas, & R. W. Lent (Eds.), *Convergence in career development theories* (pp. 77-102). Palo Alto, CA: CPP.
- Lent, R.W., Brown, S.D., & Gore, P.A. Jr. (1997). Discriminant and predictive validity of academic self-concept, academic self-efficacy, and mathematics-specific self-efficacy. *Journal of Counseling Psychology*, *44*, 307-315.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying sociocognitive theory of career and academic interest, choice, and performance [Monograph]. *Journal of Vocational Behavior*, *45*, 79-122.

- Lent, R. W., Brown, S. D., & Hackett, G. (1996). Career development from a social cognitive perspective. In D. Brown, & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 373-422). San Francisco: Jossey-Bass.
- Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, *47*(1), 36-49.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. *Journal of Counseling Psychology*, *33*, 265-269.
- Lent, R. W., Brown, S. D., Brenner, B., Chopra, S. B., Davis, T., & Talleyrand, R. S. V. (2001). The role of contextual supports and barriers in the choice of math/science educational options: A test of social cognitive hypotheses. *Journal of Counseling Psychology*, *48*(4), 474-483.
- Lent, R. W., Brown, S. D., Talleyrand, R., McPartland, E. B., Davis, T., Chopra, S. B., Alexander, M. S., Suthakaran, V., & Chai, C. M. (2002). Career choice barriers, supports, and coping strategies: College students' experiences. *Journal of Vocational Behavior*, *60*, 61-72.
- Lent, R. W., Hackett, G., & Brown, S. D. (1999). A social cognitive view of school-to-work transition. *The Career Development Quarterly*, *47*, 297-311.
- Lent, R. W., Lopez, F. G., & Bieschke, K. J. (1991). Mathematics self-efficacy: Sources and relation to science-based career choice. *Journal of Counseling Psychology*, *38*, 424-430.
- Leong, F. T., & Chervinko, S. (1996). Construct validity of career indecision: Negative personality traits as predictors of career indecision. *Journal of Career Assessment*, *4*, 315-329.
- Levinson, E. M., Ohler, D. L., Caswell, S., & Kiewra, K. (1998). Six approaches to the assessment of career maturity. *Journal of Counseling and Development*, *76*, 475-482.
- Locke, E. A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. *Journal of Applied Psychology*, *69*, 241-251.
- Lofland, J., & Lofland, L. H. (1984). *Analyzing social settings* (2nd ed.). Belmont, California: Wadsworth Publishing Company, Inc.
- Luzzo, D. A. (1993a). Reliability and validity testing of the Career Decision-Making Self-Efficacy scale. *Measurement and Evaluation in Counseling and Development*, *26*, 137-142.

- Luzzo, D. A. (1993b). Value of career decision-making self-efficacy in predicting career-decision-making attitudes and skills. *Journal of Counseling Psychology, 40*, 194-199.
- Luzzo, D. A. (1994). Assessing the value of social-cognitive constructs in career development. Paper presented at the *Annual Convention of the American Psychological Association* Los Angeles, CA: ERDS.
- Luzzo, D. A. (1996a). A psychometric evaluation of the Career Decision-Making Self-Efficacy scale. *Journal of Counseling and Development, 74*, 276-282.
- Luzzo, D. A. (1996b). Exploring the relationship between the perception of occupational barriers and career development. *Journal of Career Development, 22*, 239-248.
- Luzzo, D. A., & Day, M. A. (1999). Effects of Strong Interest Inventory feedback on career decision-making self-efficacy and social cognitive career beliefs. *Journal of Career Assessment, 7*, 1-17.
- Luzzo, D. A., & Taylor, M. (1994). Effects of verbal persuasion on the career self-efficacy of college freshmen. *California Association for Counseling and Development Journal, 14*, 31-34.
- Luzzo, D. A., & Ward, B. E. (1995). The relative contributions of self-efficacy and locus of control to the prediction of vocational congruence. *Journal of Career Development, 21*, 307-317.
- Luzzo, D. A., Funk, D. P., & Strang, J. (1996). Attributional retraining increases career decision-making self-efficacy. *The Career Development Quarterly, 44*, 378-386.
- Luzzo, D. A., Hasper, P., Albert, K. A., Bibby, M. A., & Martinelli, E. A. (1999). Effects of self-efficacy-enhancing interventions on the math/science self-efficacy and career interests, goals, and actions of career undecided college students. *Journal of Counseling Psychology, 46*, 233-243.
- Lysaght, K., Tuck, B., & Adair, V. (1999). Parental employment status, gender, ethnic identity and the employment commitment of adolescents in New Zealand. *Australian Journal of Career Development, 8*(2), 26-29.
- Maddux, J. E. (Ed.). (1995). *Self-efficacy, adaption, and adjustment: Theory, research, and application*. New York: Plenum Press.
- Mahoney, M. J., & Patterson, K. M. (1992). Changing theories of change: Recent developments in counseling. In S. D. Brown, & R. W. Lent (Eds.), *Handbook of counseling psychology* (2nd ed., pp. 665-689). New York: Wiley.
- Mann, L. (1988). Adolescent Decision Making Questionnaire. In L. Mann, R. Harmoni, & C. Power. *GOFER: Basic principles of decision making*. Woden, ACT: Curriculum Development Centre.

- Mann, L., & Friedman, I. (1999). Decision making and coping in adolescence. In E. Frydenberg (Ed.), *Decision making and coping in adolescence* (pp. 225-247). Cambridge: Cambridge University Press.
- Mann, L., Harmoni, R., & Power, C. (1989). Adolescent decision-making: The development of competence. *Journal of Adolescence*, *12*, 265-278.
- Mann, L., Harmoni, R., Power, C., Beswick, G., & Ormond, C. (1988). Effectiveness of the GOFER course in decision making for high school students. *Journal of Behavioral Decision Making*, *1*, 159-168.
- Marques, J. F. (2001). Interaction of theory, research, and applications in the work of Super: An international perspective. *International Journal for Educational and Vocational Guidance*, *1*(2), 13-20.
- Mathieu, P. S., Sowa, C. J., & Niles, S. G. (1993). Differences in career self-efficacy amongst women. *Journal of Career Development*, *19*, 187-196.
- Matsui, T., Matsui, K., & Ohnishi, R. (1990). Mechanisms underlying math self-efficacy learning of college students. *Journal of Vocational Behavior*, *37*, 225-238.
- Mau, W. (2000). Cultural differences in career decision-making styles and self-efficacy. *Journal of Vocational Behavior*, *57*, 365-378.
- McBurney, D. H. (1994). *Research methods* (3rd ed.). Pacific Grove: Brooks/Cole.
- McClelland, A., Macdonald, F., & MacDonald, H. (1998). Young people and labour market disadvantage: The situation of young people not in education or full-time work. In Dusseldorp Skills Forum (Ed.), *Australia's youth: Reality and risk* (pp. 105-123). Melbourne: CEAV.
- McCowan, C., & Hyndman, K. (1998). A career advisory system for Australia?: Summary of a review. *Australian Journal of Career Development*, *7*, 35-41.
- McCowan, C., & McKenzie, M. (1994). *The guide to career education*. Sydney, Australia: New Hobsons Press.
- McMahon, M. (1997). Career education. In W. Patton, & M. McMahon (Eds.), *Career development in practice: A systems theory perspective* (pp. 131-145). Sydney, Australia: New Hobsons Press.
- McMahon, M., & Carroll, J. (1999). Constructing a framework for a K-12 career education program. *Australian Journal of Career Development*, *8*(3), 38-44.
- McMahon, M., & Patton, W. (1995). Development of a systems theory of career development. *Australian Journal of Career Development*, *4*(2), 15-20.
- McMahon, M., & Patton, W. (1997). Gender differences in children and adolescents' perceptions of influences of their career development. *The School Counselor*, *44*, 368-376.

- McWhirter, E.H., Rasheed, S., & Crothers, M. (2000). The effects of high school career education on social-cognitive variables. *Journal of Counseling Psychology, 47*(3), 330-341.
- Meece, J. L., Wigfield, A., & Eccles, J. S. (1990). Predictors of math anxiety and its influence on young adolescents' course enrollment intentions and performance in mathematics. *Journal of Educational Psychology, 82*, 60-70.
- Meier, S. T. (1991). Vocational behavior, 1988-1990: Vocational choice, decision-making, career development interventions, and assessment. *Journal of Vocational Behavior, 39*, 131-181.
- Minichiello, V., Aroni, R., Timewell, E., & Alexander, L. (1995). *In-depth interviewing: Principles, techniques, analysis* (2nd ed.). Melbourne: Longman Australia Pty Ltd.
- Ministerial Council for Employment, Education, Training and Youth Affairs. (1999). *The Adelaide declaration on national goals for schooling in the twenty-first century*. Canberra: MCEETYA.
- Minor, C. W. (1992). Career development theories and models. In E. H. Montross, & C. J. Shinkman (Eds.), *Career development: Theory and practice* (pp. 7-34). Springfield, Illinois: Charles C Thomas.
- Mitchell, A. M., Jones, G. B., & Krumboltz, J. D. (Eds.). (1979). *Social learning theory and career decision making*. Cranston, RI: Carroll.
- Mitchell, K. E., Levin, A. S., & Krumboltz, J. D. (1999). Planned happenstance: Constructing unexpected career opportunities. *Journal of Counseling and Development, 77*, 115-124.
- Mitchell, L. K., & Krumboltz, J. D. (1996). Krumboltz's learning theory of career choice and counseling. In D. Brown, & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 233-280). San Francisco: Jossey-Bass.
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30-38.
- Niles, S. G., & Sowa, C. J. (1992). Mapping the nomological network of career self-efficacy. *The Career Development Quarterly, 41*, 13-21.
- Niles. (1998). Special section introduction: Time and timing in career development. *The Career Development Quarterly, 47*, 2-3.
- O'Brien, K. M., & Heppner, M. J. (1996). Applying social cognitive career theory to training career counselors. *The Career Development Quarterly, 44*, 367-377.
- O'Brien, K. M., Dukstein, R. D., Jackson, S. L., Tomlinson, M. J., & Kamatuka, N. A. (1999). Broadening career horizons for students in at-risk environments. *The Career Development Quarterly, 47*, 215-229.

- Oliver, L. W., & Spokane, A. R. (1988). Career-intervention outcome: What contributes to client gain? *Journal of Counseling Psychology, 35*, 447-462.
- Osipow, S. H. (1987). *Career Decision Scale manual*. Odessa, FL: Psychological Assessment Resources.
- Osipow, S. H. (1990). Convergence in theories of career choice and development. *Journal of Vocational Behavior, 36*, 122-131.
- Osipow, S. H. (1994). Moving career theory into the twenty-first century. In M. L. Savickas, & R. W. Lent (Eds.), *Convergence in career development theories: Implications for science and practice* (pp. 217-225). Palo Alto, CA: CPP Books.
- Osipow, S. H. (1999). Assessing career indecision. *Journal of Vocational Behavior, 55*, 147-154.
- Osipow, S. H., & Fitzgerald, L. F. (1996). *Theories of career development* (4th ed.). Boston: Allyn and Bacon.
- Osipow, S. H., & Gati, I. (1998). Construct and concurrent validity of the Career Decision-Making Difficulties Questionnaire. *Journal of Career Assessment, 6*, 347-364.
- Osipow, S. H., & Winer, J. L. (1996). The use of the Career Decision Scale in career assessment. *Journal of Career Assessment, 4*, 117-130.
- Osipow, S. H., Carney, C. G., & Barak, A. (1976). A scale of educational-vocational undecidedness: A typological approach. *Journal of Vocational Behavior, 27*, 233-244.
- Osipow, S., Carney, C., Winer, J., Yanico, B., & Koschier, M. (1976). *The Career Decision Scale* (Rev. 3rd ed.). Columbus, OH: Marathon Consulting and Press.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). London: Sage Publications.
- Patton, W. (2000). The nexus between vocational education and career education in schools: In competition or each defining a place for the other? *Australian Journal of Career Development, 9*(3), 34-39.
- Patton, W., & Creed, P. (2001). Developmental issues in career maturity and career decision status. *The Career Development Quarterly, 49*, 336-351.
- Patton, W., & Lokan, J. (2001). Perspectives on Donald Super's construct of career maturity. *International Journal for Educational and Vocational Guidance, 1*, 31-48.
- Patton, W., & McMahon, M. (1999). *Career development and systems theory: A new relationship*. Pacific Grove: Brooks/Cole.

- Patton, W., & McMahon, M. (2001). *Career development programs: Preparation for lifelong career decision making*. Melbourne: ACER Press.
- Peterson, S.L. (1993a). Career decision-making self-efficacy and institutional integration of underprepared college students. *Research in Higher Education, 34*, 659-685.
- Peterson, S. L. (1993b). Career decision-making self-efficacy and social and academic integration of underprepared college students: Variations based on background characteristics. *Journal of Vocational Education Research, 18*, 77-115.
- Peterson, N., & Gonzalez, R. C. (2000). *The role of work in people's lives: Applied career counseling and vocational psychology*. London: Brooks/Cole.
- Peterson, S. L., & delMas, R. C. (1998). The component structure of career decision-making self-efficacy for underprepared college students. *Journal of Career Development, 24*, 209-225.
- Phillips, S. D. (1997). Toward an expanded definition of adaptive decision making. *The Career Development Quarterly, 45*, 275-287.
- Poole, M., Nielsen, S., & Skoien, P. (1995). Constraints and compromises on the career paths of senior level women in higher education. *Australian Journal of Career Development, 4*(1), 33-37.
- Powell, D. F., & Luzzo, D. A. (1998). Evaluating factors associated with the career maturity of high school students. *The Career Development Quarterly, 47*, 145-158.
- Prideaux, L. (2001). The Career Choice Cycle Course. In W. Patton, & M. McMahon (Eds.), *Career development programs: Preparation for lifelong career decision making* (pp. 58-69). Melbourne: Australian Council for Educational Research Ltd.
- Prideaux, L., & Creed, P. A. (2001). Career maturity, career decision-making self-efficacy and career indecision: A review of the accrued evidence. *Australian Journal of Career Development, 10*(3), 7-12.
- Prideaux, L., & Creed, P. A. (2002). A review of career development research in Australia and New Zealand from 1995-2000. *International Journal for Educational and Vocational Guidance, 2*(1), 21-38.
- Prideaux, L., Creed, P., Muller, J., & Patton, W. (2000). A review of career interventions: Have investigations shed any light? *Swiss Journal of Psychology, 59*(4), 227-239.

- Prideaux, L., Patton, W., & Creed, P. (2002). Development of a theoretically derived school career program: An Australian endeavour. *International Journal for Educational and Vocational Guidance*, 2(2), 115-130.
- Qualitative Solutions and Research Pty. Ltd. (1999). *NVivo: Nudist for qualitative research* (Version 1.2 142) Bundoora, VIC: QSR.
- Queensland Government. (2002). *The review of pathways articulation through the post-compulsory years of school to further education, training and labour market participation: Scoping paper*. Brisbane: Department of Employment and Training and Department of Education.
- Raskin, P. M. (1998). Career maturity: The construct's validity, vitality, and viability. *The Career Development Quarterly*, 47, 32-35.
- Repetto, E. (2001). Following Super's heritage: Evaluation of a career development program in Spain. *International Journal for Educational and Vocational Guidance*, 1, 107-120.
- Richie, B. S., Fassinger, R. E., Linn, S. G., Johnson, J., Prosser, J., & Robinson, S. (1997). Persistence, connection, and passion: A qualitative study of the career development of highly achieving African American-black and white women. *Journal of Counseling Psychology*, 44, 133-148.
- Robbins, S. B. (1985). Validity estimates for the career decision-making self-efficacy scale. *Measurement and Evaluation in Counseling and Development*, 18, 64-71.
- Rogers, C. R. (1942). *Counseling and psychotherapy*. Boston: Houghton Mifflin.
- Rojewski, J. W. (1994). Predicting career maturity attitudes in rural economically disadvantaged youth. *Journal of Career Development*, 21(1), 49-61.
- Rojewski, J. W., & Hill, R. B. (1998). Influence of gender and academic risk behavior on career decision making and occupational choice in early adolescence. *Journal of Education for Students Placed at Risk*, 3, 265-287.
- Rotberg, H. L., Brown, D., & Ware, W. B. (1987). Career self-efficacy expectations and perceived range of career options in community college students. *Journal of Counseling Psychology*, 34, 164-170.
- Rounds, J. B., & Tracey, T. J. (1990). From trait-and-factor to person-environment fit counseling: Theory and process. In W. B. Walsh, & S. H. Osipow (Eds.), *Career counseling: Contemporary topics in vocational psychology* (pp. 1-45). Hillsdale, NJ: Erlbaum.
- Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behaviour: A review and meta-analysis. *Applied Psychology: An International Review*, 42, 139-152.

- Sampson, J. P., Watts, A. G., Palmer, M., & Hughes, D. (2000). International collaboration in translating career theory to practice. *The Career Development Quarterly, 48*(4), 332-339.
- Sandler, M. E. (1998). Career decision-making self-efficacy and an integrated model of student persistence. Paper presented at the *AERA Annual Meeting* San Diego, CA: ERIC.
- Savickas, M. L. (1995). Current theoretical issues in vocational psychology: Convergence, divergence, and schism. In W. B. Walsh, & S. H. Osipow (Eds.), *Handbook of vocational psychology* (pp. 1-34). Mahway, NJ: Erlbaum.
- Savickas, M. L. (1996). Public policy and career counseling for the twenty-first century. *The Career Development Quarterly, 45*, 3-4.
- Savickas, M. L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *The Career Development Quarterly, 45*, 247-259.
- Savickas, M. L. (2001a). A developmental perspective on vocational behaviour: Career patterns, salience, and themes. *International Journal for Educational and Vocational Guidance, 1*, 49-57.
- Savickas, M. L. (2001b). Introduction: Envisioning the future of vocational psychology. *Journal of Vocational Behavior, 59*, 167-170.
- Savickas, M. L. (2001c). The next decade in vocational psychology: Mission and objectives. *Journal of Vocational Behavior, 59*, 284-290.
- Savickas, M. L., & Lent, R. W. (Eds.). (1994). *Convergence in career development theories: Implications for science and practice*. Palo Alto, CA: CPP Books.
- Savickas, M. L., & Walsh, W. B. (Eds.). (1996). *Handbook of career counseling theory and practice*. Palo Alto, CA: Davies-Black.
- Schermerhorn, J. R., Hunt, J. G., & Osborn, R. N. (1994). *Managing organizational behavior*. New York: John Wiley.
- Schmitt-Rodermund, E., & Silbereisen, R. K. (1998). Career maturity determinants: Individual development, social context, and historical time. *The Career Development Quarterly, 47*, 16-31.
- Schunk, D. H. (1989). Self-efficacy and cognitive achievement: Implications for students with learning problems. *Journal of Learning Disabilities, 22*, 15-23.
- Simons, R., Goddard, R., & Patton, W. (2000). Measuring vocational interests: A call for multi-sample norms. *Career Development International, 5*(7), 351-359.
- Smart, R. M. (1998). Career stages in Australian professional women: A test of Super's model. *Journal of Vocational Behavior, 52*, 379-395.

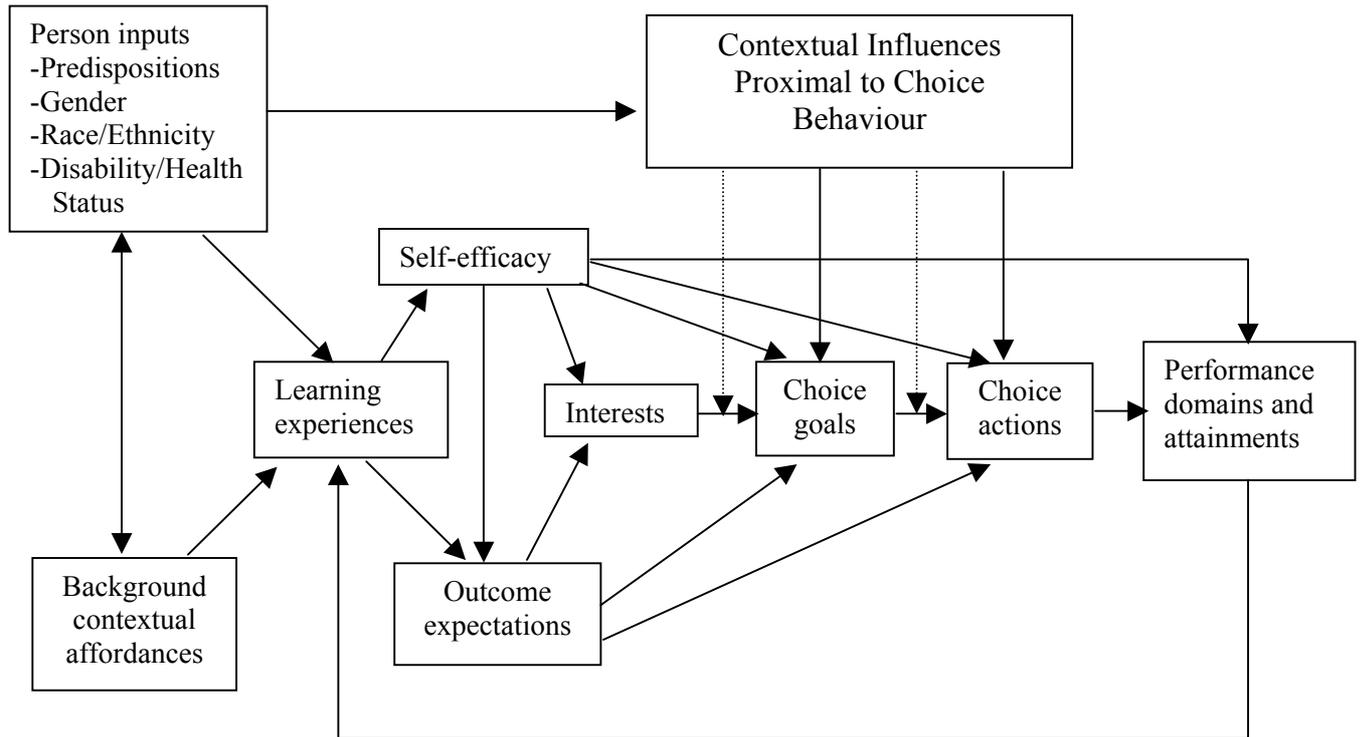
- Smart, R., & Peterson, C. (1997). Super's career stages and the decision to change careers. *Journal of Vocational Behavior, 51*, 358-374.
- Solberg, V., Good, G. E., & Nord, D. (1994). Career search self-efficacy: Ripe for applications and intervention programming. *Journal of Career Development, 2*, 63-72.
- Spencer, M. B., Cole, S. P., DuPree, D., Glymph, A., & Pierre, P. (1993). Self-efficacy amongst urban African American early adolescents: Exploring issues of risk, vulnerability, and resilience. *Development and Psychopathology, 5*, 719-739.
- Spokane, A.R. (1991). *Career intervention*. Edgewood Cliffs, NJ: Prentice Hall.
- Spokane, A. R. (1996). Holland's theory. In D. Brown, & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 33-74). San Francisco: Jossey-Bass.
- Spokane, A. R. (2002, May). Culture centered career education. Paper presented at the *IAEVG World Congress Counsellor: Profession, Passion, or Calling?*
- Spokane, A.R. & Oliver, L.W. (1983). The outcomes of vocational intervention. In S.H. Osipow, & W.B. Walsh (Eds.). *Handbook of vocational psychology*. Hillsdale, NJ: Erlbaum.
- Staley, W. (1996). The relationship between fear of success, self-concept, and career decision making. Paper presented at the *Annual Meeting of the Mid-South Educational Research Association* Tuscaloosa, AL: EDRS.
- Stead, G. B., & Watson, M. B. (1993). How similar are the factor structures of the Career Decision Scale, the Career Decision Profile, and the Career Factors Inventory? *Educational and Psychological Measurement, 53*, 281-290.
- Stead, G. B., & Watson, M. B. (1998). Career research in South Africa: Challenges for the future. *Journal of Vocational Behavior, 52*, 289-299.
- Super, D. E. (1957). *The psychology of careers*. New York: Harper.
- Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior, 16*, 282-298.
- Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown, & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 197-261). San Francisco: Jossey-Bass.
- Super, D.E. (1992). Toward a comprehensive theory of career development. In D. H. Montross, & C. J. Shinkman (Eds.), *Career development: Theory and practice* (pp. 35-64). Springfield, IL: Charles C Thomas.

- Super, D. E. (1994). A life-span, life-space perspective on convergence. In M. L. Savickas, & R. W. Lent (Eds.), *Convergence in career development theories* (pp. 63-74). Palo Alto, CA: CPP.
- Super, D. E., & Jordaan, J. P. (1973). Career development theory. *British Journal of Guidance and Counselling, 1*, 3-16.
- Super, D. E., & Nevill, D. D. (1984). Work role salience as a determinant of career maturity in high school students. *Journal of Vocational Behavior, 25*, 30-44.
- Super, D.E., Thompson, A.S., Lindeman, R.H., Jordaan, J.P., & Myers, R.A. (1988). *Manual for the Adult Career Concerns Inventory and the Career Development Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Swanson, J. L., & Gore, P. A. Jr. (2000). Advances in vocational psychology theory and research. In S. D. Brown, & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 233-269). New York: John Wiley & Sons, Inc.
- Sweet, R. (1998). Youth: The rhetoric and the reality of the 1990s. In Dusseldorp Skills Forum (Ed.), *Australia's youth: Reality and risk* (pp. 5-22). Melbourne: CEAV.
- Sweet, R. (2001). Career information, guidance and counselling services: Policy perspectives. *Australian Journal of Career Development, 10*(2), 11-14.
- Taylor, K. M., & Betz, N. E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior, 22*, 63-81.
- Taylor, K. M., & Popma, J. (1990). An examination of the relationships amongst career decision-making self-efficacy, career salience, locus of control, and vocational indecision. *Journal of Vocational Behavior, 37*, 17-31.
- Temple, R. D., & Osipow, S. H. (1994). The relationship between task-specific self-efficacy egalitarianism and career indecision for females. *Journal of Career Assessment, 2*, 82-90.
- Tuck, B., Rolfe, J., & Adair, V. (1995). Career indecision and self-efficacy amongst adolescents. *Australian Journal of Career Development, 4*(3), 60-63.
- Vondracek, F. W. (2001). The developmental perspective in vocational psychology. *Journal of Vocational Behavior, 59*(2), 252-261.
- Vondracek, F. W., & Reitzle, M. (1998). The viability of career maturity theory: A developmental-contextual perspective. *The Career Development Quarterly, 47*, 6-15.
- Vondracek, F. W., Schulenberg, J. E., Skorikov, V., Gillespie, L. K., & Wahlheim, C. (1995). The relationship of identity status to career indecision during adolescence. *Journal of Adolescence, 18*, 17-29.

- Watson, M. B., & Stead, G. B. (1994). A longitudinal study of career decidedness amongst white South African high school students. *Journal of Vocational Behavior, 45*, 261-269.
- Watson, M., Stead, G. B., & Schonegevel, C. (1998). Does Holland's hexagon travel well? *Australian Journal of Career Development, 7*(2), 22-26.
- Watt, H. M. (1996). Students' gendered perceptions of talent at high school according to academic domain, and their effect on career aspirations. *Singapore ERA & AARE Joint Conference*.
- Watts, A. G. (1995). *The changing concept of career and its implications for career education*. Cambridge, UK: National Institute for Careers Education and Counselling.
- Watts, A. G. (1996). Toward a policy for lifelong career development: A transatlantic perspective. *The Career Development Quarterly, 45*, 41-53.
- Watts, A.G. (1997). Careerquake. *The Australian Journal of Career Development, 6*(2), 36-40.
- Whiston, S. C. (1996). The relationship amongst family interaction patterns and career indecision and career decision-making self-efficacy. *Journal of Career Development, 23*, 137-149.
- Wilkinson, L. (1999). Statistical methods in psychology journals: Guidelines and explanations. *American Psychologist, 54*(8), 594-604.
- Young, R. A., & Chen, C. P. (1999). Annual review: Practice and research in career counseling and development - 1998. *The Career Development Quarterly, 48*, 98-141.
- Zunker, V. G. (1998). *Career Counseling: Applied concepts of life planning* (5th ed.). Pacific Grove: Brooks/Cole.

APPENDIX A

SOCIAL COGNITIVE CAREER THEORY'S CAREER CHOICE MODEL



Person, contextual, and experiential factors affecting career-related choice behaviour (Lent, Brown, & Hackett, 1994)

## APPENDIX B

## Stratified Sample

| <b>Level of Office or Staff Category</b> | <b>Total Number of Staff per Category</b> | <b>Population % Weighting</b> | <b>Number Drawn for Sample</b> |
|--|---|-------------------------------|--------------------------------|
| Principal                                | 1   | 1                             | 1                              |
| Guidance Officers                        | 2   | 1                             | 1                              |
| Deputy Principals                        | 3   | 2                             | 1                              |
| Jobs Pathway Employees                   | 3   | 2                             | 1                              |
| Business Education Teachers              | 3   | 2                             | 1                              |
| Resource Centre Staff                    | 3   | 2                             | 1                              |
| Art Teachers                             | 4   | 3                             | 1                              |
| Performing Arts Teachers                 | 4   | 3                             | 1                              |
| Home Economics Teachers                  | 4   | 3                             | 1                              |
| Parent Committee Representatives         | 5   | 4                             | 2                              |
| Manual Arts Teachers*                    | 5   | 4                             | 1                              |
| Behaviour Management Team*               | 5   | 4                             | 1                              |
| Year level coordinators                  | 6   | 5                             | 2                              |
| Health/Physical Education Teachers*      | 6   | 5                             | 1                              |
| Department Heads                         | 12  | 10                            | 3                              |
| Ancillary Staff                          | 14  | 11                            | 3                              |
| General English Teachers                 | 19  | 15                            | 4                              |
| Mathematics/Science Teachers             | 20  | 16                            | 4                              |
| Total                                    | 124                                       |                               | 30                             |

*Note:* \*At least one member of these departments worked in a part time capacity. This is the reason for their slightly lower representation.

## APPENDIX C

### Interview Questions

1. What program or programs does this school currently engage in to assist students in career decision-making?
2. What would you like to see included in a program to enhance career decision making skills at this school?
3. For most students at this school, what do you think are the barriers to making sound decisions about choosing a career?
4. How would you rate the average level of confidence with which students at this school approach career decision making?
5. In general terms, what do you think are the aspirations that young people at this high school aim for?
6. What else would you like to add that you think is important for me to be aware of in regard to this research project?

APPENDIX D

**Interview Consent Form**

**Information Sheet**

A LONGITUDINAL EVALUATION OF A THEORETICALLY DERIVED  
ADOLESCENT CAREER EDUCATION INTERVENTION

---

**Chief Investigator(s):**

Lee-Ann Prideaux  
School of Applied Psychology  
Contact details: 07 5552 8119

---

You have been chosen to take part in this interview to help us design a career education program to enhance the career-related decision-making of year 10 students at your school. With your permission, I will be taping this interview so that I can get a detailed account of what you have said. I want to assure you that your name will not be used on the tape and all transcriptions will be numbered and aggregated so no one will know who made any particular comment. In the main, your input will be pooled with what everyone else has said and the most common statements will generally be the ones reported. I promise that your participation in this interview will remain confidential.

I expect that the interview will take between 30 to 45 minutes depending on how much you have to say. Here is a copy of the six questions I will be asking you so you can read them now to decide if you wish to take part or not. If you have any complaints concerning the manner in which this interview was conducted, you may inform me at any time, or if an independent person is preferred, either the University's Research Ethics Officer, Office for Research, Bray Centre, Griffith University, Kessels Road, Nathan, Qld 4111, telephone (07) 3875 6618; or the Pro Vice-Chancellor (Administration), Bray Centre, Griffith University, Kessels Road, Nathan, Qld 4111, telephone (07) 3875 7343

You can keep this sheet of questions with you during the interview to help us stay on track but at the end of the interview I ask that you return it to me. It is important that you do not discuss the content of the interview with anyone. This way, all participants will be giving me their "off the cuff" answers, which I most want to hear.

Thank you very much for your cooperation. Do you want to ask me any questions before I turn on the tape recorder?

---

I have read this information sheet and consent form. I agree to participate in the A Longitudinal Evaluation of aTheoretically Derived Adolescent Career Education Intervention project and give my consent freely. I understand that the interview will be carried out as described in the information statement, a copy of which I have retained. I realise that whether or not I decide to participate is my decision and will not affect my position at the school. I also realise that I can withdraw from the interview at any time and that I do not have to give any reasons for withdrawing. I have had all questions answered to my satisfaction.

Signatures:

.....  
 Parent/Caregiver(s)/Participant Date .....

.....  
 Investigator(s) Date .....

## APPENDIX E

## Survey Consent Script

## QUESTIONNAIRE CONSENT SCRIPT

*(to be read to students prior to filling out surveys)*

Mrs Prideaux, the researcher who is currently working at our school, has asked me to read this to you before you begin the questionnaire you have in front of you.

Thank you all for being part of this study. Soon you will be asked to complete a series of questions by ticking the answer that best matches your opinion about many things to do with making career decisions. your school is taking part in this survey to help design a career education curriculum that closely suits **your** needs.

When you are ticking the box beside each question, please make sure you choose the answer **you** believe is most appropriate for you personally, but don't spend too much time thinking about each one. We are interested in what **you think about yourself** so don't discuss your answers with anyone else.

Please be assured that great care will be taken to follow ethical guidelines throughout this research project. This means that all stages of the study will be carefully designed so that they are fair and safe for all participants and that each person's input will be kept confidential. Mrs Prideaux has promised not to disclose any participant's name throughout the research process.

As you work your way through, you may feel a bit overwhelmed or confused. Please don't hesitate to raise your hand for some help if you need it. You may even get a bit tired of reading and thinking. If this happens, take a minute or two to quietly relax before starting again.

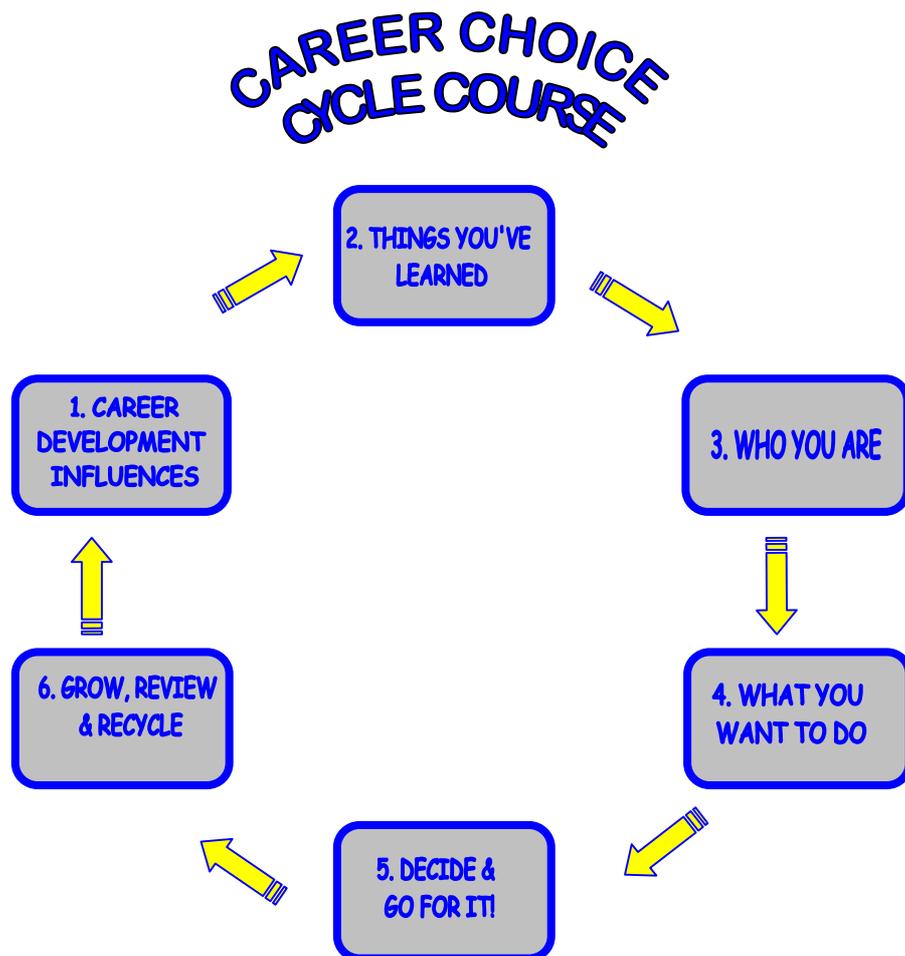
This is not a test and it is not part of your assessment for any school subject. However, it is really important that you fill in **every** question carefully and honestly because the accurate information you provide will be of great benefit to you and other students at your school in the future. If you would not like to participate in this survey, please inform your teacher.

Finally, you may wish to speak with Mrs Prideaux, following this session. Please don't hesitate to seek her assistance or just get together with her for a private discussion if you have any concerns or questions about the survey.

Thank you very much for your co-operation.

APPENDIX F

Career Choice Cycle Course:  
Model used to illustrate the Career Choice Cycle Course



*Note:* Each box represents one lesson or component of the course and the numbers indicate the order of delivery.

## APPENDIX G

## Latin Square

The order and sequence effects of the scales used in the test battery have been reduced via the following design of presentation, which is related to a balanced latin square. That is, no scales are preceded or followed by the same scale in any of the four test batteries in order to counter sequence effects. Additionally, no scale is presented in the same position in any of batteries.

- CMI-R = Career Maturity Inventory Revised  
 CDS = Career Decision Scale  
 CDMSE = Career Decision-Making Self-Efficacy - Short Form Scale  
 FADMQ = Flinders Adolescent Decision-Making Questionnaire  
 Demographics = gender, students' work experience, school achievement, performance goals and certainty for future plans, parents' employment status and education.

| <b>Pre-Test</b> | <b>Post-Test</b> | <b>8/12 Week Follow-up</b> | <b>20 Week Follow-up</b> |
|-----------------|------------------|----------------------------|--------------------------|
| CMI-R           | FADMQ            | CDMSE                      | Demographics             |
| CDS             | CMI-R            | Demographics               | FADMQ                    |
| CDMSE           | Demographics     | CMI-R                      | CDS                      |
| FADMQ           | CDMSE            | CDS                        | CMI-R                    |
| Demographics    | CDS              | FADMQ                      | CDMSE                    |

## APPENDIX H

Gender Summary Statistics for the Five Dependent Variables for Groups 1 and 2  
Combined

|           |                | Dependent Variables |         |            |             |              |
|-----------|----------------|---------------------|---------|------------|-------------|--------------|
|           |                | CMI-R               | CDMSE   | CDS        | FADMQ       | FADMQ        |
|           |                | Attitude            |         | Indecision | Maladaption | Resoluteness |
|           |                | (CM)                |         | (CI)       | (M)         | (R)          |
| Females   | <i>n</i> = 115 |                     |         |            |             |              |
| Pre-Test  | <i>M</i>       | 9.70                | 90.01   | 32.10      | 3.79        | 11.91        |
|           | ( <i>SD</i> )  | (3.31)              | (15.01) | (9.14)     | 3.08        | (3.63)       |
| Post-Test | <i>M</i>       | 10.83               | 91.55   | 30.52      | 3.50        | 11.94        |
|           | ( <i>SD</i> )  | (3.11)              | (13.91) | (9.72)     | 2.74        | (3.34)       |
| Males     | <i>n</i> = 82  |                     |         |            |             |              |
| Pre-Test  | <i>M</i>       | 10.04               | 90.23   | 32.71      | 4.34        | 12.59        |
|           | ( <i>SD</i> )  | (3.08)              | (14.55) | (8.94)     | (2.72)      | (3.63)       |
| Post-Test | <i>M</i>       | 9.84                | 89.83   | 34.89      | 4.49        | 12.48        |
|           | ( <i>SD</i> )  | (3.53)              | (14.02) | (9.61)     | (2.93)      | (3.22)       |
| Total     | <i>N</i> = 197 |                     |         |            |             |              |
| Pre-Test  | <i>M</i>       | 9.84                | 90.10   | 32.36      | 4.02        | 12.19        |
|           | ( <i>SD</i> )  | (3.21)              | (14.79) | (9.04)     | (2.94)      | (3.63)       |
| Post-Test | <i>M</i>       | 10.42               | 90.83   | 32.34      | 3.91        | 12.16        |
|           | ( <i>SD</i> )  | (3.32)              | (13.95) | (9.89)     | (2.86)      | (3.29)       |

## APPENDIX I

## Summary Statistics for Males and Females in the Expert and Teacher Groups

| Dependent Variables          | Gender | Expert Group<br><i>n</i> = 110 |           |           |           | Teacher Group<br><i>n</i> = 87 |           |           |           |
|------------------------------|--------|--------------------------------|-----------|-----------|-----------|--------------------------------|-----------|-----------|-----------|
|                              |        | Pre-Test                       |           | Post-Test |           | Pre-Test                       |           | Post-Test |           |
|                              |        | <i>M</i>                       | <i>SD</i> | <i>M</i>  | <i>SD</i> | <i>M</i>                       | <i>SD</i> | <i>M</i>  | <i>SD</i> |
| CMI-R<br>Attitude<br>(CM)    | F      | 9.18                           | 3.01      | 10.85     | 3.04      | 10.27                          | 3.54      | 10.80     | 3.21      |
|                              | M      | 9.86                           | 2.85      | 8.60      | 3.60      | 10.31                          | 3.45      | 11.78     | 2.39      |
|                              | Total  | 9.52                           | 2.95      | 9.73      | 3.47      | 10.29                          | 3.49      | 11.29     | 2.96      |
| CDMSE                        | F      | 90.20                          | 15.21     | 91.88     | 14.25     | 89.80                          | 14.93     | 91.18     | 13.66     |
|                              | M      | 88.50                          | 14.85     | 88.38     | 14.16     | 92.94                          | 13.87     | 92.09     | 13.71     |
|                              | Total  | 89.35                          | 15.00     | 90.13     | 14.25     | 91.37                          | 14.55     | 91.64     | 13.60     |
| CDS<br>Indecision<br>(CI)    | F      | 32.12                          | 8.18      | 32.28     | 10.06     | 32.09                          | 10.16     | 28.60     | 9.03      |
|                              | M      | 31.76                          | 7.94      | 37.48     | 8.14      | 34.19                          | 10.27     | 30.84     | 10.45     |
|                              | Total  | 31.94                          | 8.04      | 34.88     | 9.55      | 33.14                          | 10.19     | 29.72     | 9.58      |
| FADMQ<br>Maladaption<br>(M)  | F      | 3.93                           | 3.07      | 3.53      | 2.74      | 3.64                           | 3.11      | 3.47      | 2.77      |
|                              | M      | 3.82                           | 2.32      | 4.96      | 2.87      | 5.16                           | 3.11      | 3.75      | 2.92      |
|                              | Total  | 3.88                           | 2.74      | 4.25      | 2.88      | 4.40                           | 3.18      | 3.61      | 2.81      |
| FADMQ<br>Resoluteness<br>(R) | F      | 11.67                          | 3.66      | 12.08     | 3.14      | 12.18                          | 3.60      | 11.78     | 3.57      |
|                              | M      | 12.50                          | 3.90      | 12.70     | 3.14      | 12.72                          | 3.23      | 12.12     | 3.37      |
|                              | Total  | 12.08                          | 3.78      | 12.39     | 3.14      | 12.45                          | 3.46      | 11.95     | 3.48      |

## APPENDIX J

## Summary Statistics for Males and Females in the Expert and Control Groups

| Dependent Variables    | Gender | Expert Group<br><i>n</i> = 110 |           |           |           | Wait-Listed Control Group<br><i>n</i> = 94 |           |           |           |
|------------------------|--------|--------------------------------|-----------|-----------|-----------|--|-----------|-----------|-----------|
|                        |        | Pre-Test                       |           | Post-Test |           | Pre-Test                                   |           | Post-Test |           |
|                        |        | <i>M</i>                       | <i>SD</i> | <i>M</i>  | <i>SD</i> | <i>M</i>                                   | <i>SD</i> | <i>M</i>  | <i>SD</i> |
| CMI-R Attitude (CM)    | F      | 9.18                           | 3.01      | 10.85     | 3.04      | 9.64                                       | 3.13      | 10.46     | 3.35      |
|                        | M      | 9.86                           | 2.85      | 8.60      | 3.60      | 9.51                                       | 2.95      | 10.20     | 3.31      |
|                        | Total  | 9.52                           | 2.95      | 9.73      | 3.47      | 9.58                                       | 3.05      | 10.33     | 3.32      |
| CDMSE                  | F      | 90.20                          | 15.21     | 91.88     | 14.25     | 87.61                                      | 15.98     | 91.22     | 14.37     |
|                        | M      | 88.50                          | 14.85     | 88.38     | 14.16     | 90.37                                      | 13.65     | 91.37     | 14.51     |
|                        | Total  | 89.35                          | 15.00     | 90.13     | 14.25     | 88.99                                      | 15.14     | 91.30     | 14.34     |
| CDS Indecision (CI)    | F      | 32.12                          | 8.18      | 32.28     | 10.06     | 32.63                                      | 9.81      | 31.81     | 9.89      |
|                        | M      | 31.76                          | 7.94      | 37.48     | 8.14      | 32.43                                      | 9.39      | 34.40     | 10.08     |
|                        | Total  | 31.94                          | 8.04      | 34.88     | 9.55      | 32.53                                      | 9.60      | 33.11     | 9.99      |
| FADMQ Maladaption (M)  | F      | 3.93                           | 3.07      | 3.53      | 2.74      | 3.14                                       | 2.64      | 3.51      | 2.75      |
|                        | M      | 3.82                           | 2.32      | 4.96      | 2.87      | 3.97                                       | 2.53      | 4.77      | 3.04      |
|                        | Total  | 3.88                           | 2.74      | 4.25      | 2.88      | 3.55                                       | 2.61      | 4.14      | 2.91      |
| FADMQ Resoluteness (R) | F      | 11.67                          | 3.66      | 12.08     | 3.14      | 11.36                                      | 4.11      | 12.36     | 3.54      |
|                        | M      | 12.50                          | 3.90      | 12.70     | 3.14      | 11.86                                      | 2.85      | 12.83     | 3.23      |
|                        | Total  | 12.08                          | 3.78      | 12.39     | 3.14      | 11.61                                      | 3.68      | 12.59     | 3.42      |

## APPENDIX K

## Summary Statistics for Males and Females in the Teacher and Control Groups

| Dependent Variables    | Gender | Teacher Group<br><i>n</i> = 87 |           |           |           | Wait-Listed Control Group<br><i>n</i> = 94 |           |           |           |
|------------------------|--------|--------------------------------|-----------|-----------|-----------|--|-----------|-----------|-----------|
|                        |        | Pre-Test                       |           | Post-Test |           | Pre-Test                                   |           | Post-Test |           |
|                        |        | <i>M</i>                       | <i>SD</i> | <i>M</i>  | <i>SD</i> | <i>M</i>                                   | <i>SD</i> | <i>M</i>  | <i>SD</i> |
| CMI-R Attitude (CM)    | F      | 10.27                          | 3.54      | 10.80     | 3.21      | 9.64                                       | 3.13      | 10.46     | 3.35      |
|                        | M      | 10.31                          | 3.45      | 11.78     | 2.39      | 9.51                                       | 2.95      | 10.20     | 3.31      |
|                        | Total  | 10.29                          | 3.49      | 11.29     | 2.96      | 9.58                                       | 3.05      | 10.33     | 3.32      |
| CDMSE                  | F      | 89.80                          | 14.93     | 91.18     | 13.66     | 87.61                                      | 15.98     | 91.22     | 14.37     |
|                        | M      | 92.94                          | 13.87     | 92.09     | 13.71     | 90.37                                      | 13.65     | 91.37     | 14.51     |
|                        | Total  | 91.37                          | 14.55     | 91.64     | 13.60     | 88.99                                      | 15.14     | 91.30     | 14.34     |
| CDS Indecision (CI)    | F      | 32.09                          | 10.16     | 28.60     | 9.03      | 32.63                                      | 9.81      | 31.81     | 9.89      |
|                        | M      | 34.19                          | 10.27     | 30.84     | 10.45     | 32.43                                      | 9.39      | 34.40     | 10.08     |
|                        | Total  | 33.14                          | 10.19     | 29.72     | 9.58      | 32.53                                      | 9.60      | 33.11     | 9.99      |
| FADMQ Maladaption (M)  | F      | 3.64                           | 3.11      | 3.47      | 2.77      | 3.14                                       | 2.64      | 3.51      | 2.75      |
|                        | M      | 5.16                           | 3.11      | 3.75      | 2.92      | 3.97                                       | 2.53      | 4.77      | 3.04      |
|                        | Total  | 4.40                           | 3.18      | 3.61      | 2.81      | 3.55                                       | 2.61      | 4.14      | 2.91      |
| FADMQ Resoluteness (R) | F      | 12.18                          | 3.60      | 11.78     | 3.57      | 11.36                                      | 4.11      | 12.36     | 3.54      |
|                        | M      | 12.72                          | 3.23      | 12.12     | 3.37      | 11.86                                      | 2.85      | 12.83     | 3.23      |
|                        | Total  | 12.45                          | 3.46      | 11.95     | 3.48      | 11.61                                      | 3.68      | 12.59     | 3.42      |

## APPENDIX L

## Summary Statistics for Males and Females in the Teacher and Generic Groups

| Dependent Variables         | Gender | Teacher group<br>(Matched Sample)<br><i>n</i> = 46 |           |           |           | Generic group<br><i>n</i> = 28 |           |           |           |
|-----------------------------|--------|--|-----------|-----------|-----------|--------------------------------|-----------|-----------|-----------|
|                             |        | Pre-Test   |           | Post-Test |           | Pre-Test                       |           | Post-Test |           |
|                             |        | <i>M</i>   | <i>SD</i> | <i>M</i>  | <i>SD</i> | <i>M</i>                       | <i>SD</i> | <i>M</i>  | <i>SD</i> |
| CMI-R<br>Attitude<br>(CM)   | F      | 9.69   | 3.56      | 10.38     | 3.24      | 7.89                           | 2.03      | 8.44      | 2.79      |
|                             | M      | 9.65   | 3.43      | 11.82     | 2.63      | 9.37                           | 3.45      | 8.53      | 2.97      |
|                             | Total  | 9.67   | 3.47      | 11.10     | 3.08      | 8.63                           | 3.11      | 8.49      | 2.86      |
| CDMSE                       | F      | 85.93  | 15.78     | 89.14     | 14.18     | 84.22                          | 20.86     | 82.44     | 8.19      |
|                             | M      | 88.35  | 15.41     | 89.76     | 14.02     | 93.21                          | 16.86     | 80.63     | 16.21     |
|                             | Total  | 87.14  | 15.52     | 89.45     | 13.97     | 88.72                          | 18.35     | 81.54     | 13.99     |
| CDS<br>Indecision<br>(CI)   | F      | 33.07  | 9.11      | 30.52     | 8.39      | 36.33                          | 10.64     | 38.78     | 8.91      |
|                             | M      | 33.24  | 10.87     | 29.06     | 9.08      | 32.16                          | 11.30     | 38.64     | 7.30      |
|                             | Total  | 33.15  | 9.67      | 29.79     | 8.58      | 34.25                          | 11.07     | 38.73     | 7.68      |
| FADMQ<br>Maladaption<br>(M) | F      | 4.03   | 3.25      | 3.45      | 2.82      | 5.33                           | 1.73      | 5.56      | 3.05      |
|                             | M      | 5.71   | 3.27      | 4.24      | 3.27      | 5.37                           | 3.39      | 5.47      | 3.20      |
|                             | Total  | 4.87   | 3.32      | 3.84      | 2.98      | 5.35                           | 2.92      | 5.52      | 3.10      |

## APPENDIX M

Summary Statistics for the Five Dependent Variables for Males and Females in  
Expert Group

|                              |        | Expert Group<br><i>n</i> = 92<br>(52 Females, 40 Males) |           |           |           |             |           |             |           |
|------------------------------|--------|---|-----------|-----------|-----------|-------------|-----------|-------------|-----------|
| Dependent Variables          | Gender | Pre-Test  |           | Post-Test |           | Follow-Up 1 |           | Follow-Up 2 |           |
|                              |        | <i>M</i>  | <i>SD</i> | <i>M</i>  | <i>SD</i> | <i>M</i>    | <i>SD</i> | <i>M</i>    | <i>SD</i> |
| CMI-R<br>Attitude<br>(CM)    | F      | 9.27  | 2.96      | 11.00     | 2.94      | 11.50       | 2.90      | 10.10       | 3.02      |
|                              | M      | 10.03   | 2.76      | 8.52      | 3.50      | 11.33       | 3.17      | 9.38        | 3.73      |
|                              | Total  | 9.65  | 2.89      | 9.76      | 3.41      | 11.41       | 3.00      | 9.74        | 3.35      |
| CDMSE                        | F      | 98.88   | 14.77     | 92.50     | 14.33     | 91.38       | 14.60     | 93.02       | 17.06     |
|                              | M      | 89.45   | 14.23     | 89.05     | 13.83     | 89.07       | 14.97     | 90.18       | 19.00     |
|                              | Total  | 89.67   | 14.46     | 90.78     | 14.14     | 90.23       | 14.73     | 91.60       | 17.88     |
| CDS<br>Indecision<br>(CI)    | F      | 31.67   | 7.93      | 31.44     | 10.17     | 27.62       | 10.15     | 28.35       | 8.96      |
|                              | M      | 32.48   | 9.39      | 37.53     | 8.36      | 30.70       | 9.48      | 30.40       | 11.03     |
|                              | Total  | 32.07   | 8.55      | 34.48     | 9.86      | 29.16       | 9.93      | 29.37       | 9.91      |
| FADMQ<br>Maladaption<br>(M)  | F      | 3.90  | 3.05      | 3.52      | 2.80      | 3.67        | 3.26      | 3.50        | 2.82      |
|                              | M      | 3.45  | 2.18      | 4.70      | 2.78      | 5.13        | 3.22      | 4.55        | 2.63      |
|                              | Total  | 3.68  | 2.70      | 4.11      | 2.84      | 4.40        | 3.31      | 4.03        | 2.78      |
| FADMQ<br>Resoluteness<br>(R) | F      | 11.58   | 3.49      | 11.87     | 3.12      | 11.79       | 3.98      | 11.62       | 4.14      |
|                              | M      | 12.95   | 3.74      | 12.85     | 3.17      | 12.70       | 3.07      | 12.40       | 3.85      |
|                              | Total  | 12.26   | 3.65      | 12.36     | 3.16      | 12.24       | 3.62      | 12.01       | 4.01      |

## APPENDIX N

Summary Statistics for the Five Dependent Variables for Males and Females in  
Teacher group

|                              |        | Teacher Group          |           |           |           |             |           |
|------------------------------|--------|------------------------|-----------|-----------|-----------|-------------|-----------|
|                              |        | <i>n</i> = 81          |           |           |           |             |           |
|                              |        | (50 Females, 31 Males) |           |           |           |             |           |
| Dependent<br>Variables       | Gender | Pre-Test               |           | Post-Test |           | Follow-Up 1 |           |
|                              |        | <i>M</i>               | <i>SD</i> | <i>M</i>  | <i>SD</i> | <i>M</i>    | <i>SD</i> |
| CMI-R<br>Attitude<br>(CM)    | F      | 10.26                  | 3.65      | 10.80     | 3.21      | 9.60        | 3.38      |
|                              | M      | 10.19                  | 3.44      | 11.71     | 2.40      | 9.45        | 3.03      |
|                              | Total  | 10.23                  | 3.55      | 11.26     | 2.95      | 9.53        | 3.23      |
| CDMSE                        | F      | 89.68                  | 14.52     | 90.86     | 13.25     | 89.76       | 15.93     |
|                              | M      | 92.81                  | 14.08     | 92.00     | 13.92     | 93.39       | 15.25     |
|                              | Total  | 91.24                  | 14.35     | 91.43     | 13.44     | 91.57       | 15.68     |
| CDS<br>Indecision<br>(CI)    | F      | 32.06                  | 10.34     | 28.62     | 8.99      | 29.46       | 9.79      |
|                              | M      | 34.61                  | 10.15     | 31.26     | 10.35     | 29.52       | 9.09      |
|                              | Total  | 33.34                  | 10.28     | 29.94     | 9.66      | 29.49       | 9.47      |
| FADMQ<br>Maladaption<br>(M)  | F      | 3.62                   | 3.15      | 3.42      | 2.81      | 3.58        | 3.00      |
|                              | M      | 5.19                   | 3.16      | 3.77      | 2.96      | 4.06        | 3.13      |
|                              | Total  | 4.41                   | 3.22      | 3.60      | 2.85      | 3.82        | 3.04      |
| FADMQ<br>Resoluteness<br>(R) | F      | 12.16                  | 3.62      | 11.78     | 3.41      | 11.68       | 3.96      |
|                              | M      | 12.77                  | 3.26      | 12.23     | 3.37      | 11.81       | 3.64      |
|                              | Total  | 12.47                  | 3.48      | 12.00     | 3.38      | 11.74       | 3.81      |

APPENDIX O

Unprompted Career-Related Inquiry by a Year 10 Student

|  |                        |                       |                    |                       |       |
|--|------------------------|-----------------------|--------------------|-----------------------|-------|
| UNPROMPTED CAREER-RELATED INQUIRY BY A YEAR 10 STUDENT |                        |                       |                    |                       |       |
| Name   | _____                  | Date                  | _____              | Form                  | _____ |
| Topic Discussed:                                       | Career Decision-Making | <input type="radio"/> | Subject Selection  | <input type="radio"/> |       |
|  | Self Awareness         | <input type="radio"/> | Career Information | <input type="radio"/> |       |
|  | Course Information     | <input type="radio"/> | Leaving School     | <input type="radio"/> |       |
| Other  | _____                  |                       |                    |                       |       |
| What prompted this student to visit?                   | _____                  |                       |                    |                       |       |
|  | _____                  |                       |                    |                       |       |

APPENDIX P

The Career Choice Cycle Course Evaluation

**The Career Choice Cycle Course Evaluation**

Now that you have completed the course, we would like to give you the opportunity to help us improve it. This information will help us review the lessons and make any changes that are necessary to best suit your needs and make it more interesting for other students in the future. We want to know what you liked but also what you didn't like, and any suggestions that you might have. Please answer the following questions carefully.

1. How would you rate the course on the following scales?

|                     |                     |                       |                  |
|---------------------|---------------------|-----------------------|------------------|
|                     |                     |                       |                  |
| Very<br>Interesting | Interesting         | Just OK               | Boring           |
|                     |                     |                       |                  |
| Very<br>Useful      | Useful              | Some parts<br>Useful  | Useless          |
|                     |                     |                       |                  |
| Learnt<br>a lot     | Learnt<br>something | Learnt<br>very little | Waste<br>of time |

2. Which parts of the course did you like most? Why?

---



---



---

3. Which parts of the course did you dislike? Why?

---



---



---

4. Any other comments or suggestions?

---



---



---

5. Do you think you have become a better career decision-maker after doing this course?

|                |                    |                   |                   |           |
|----------------|--------------------|-------------------|-------------------|-----------|
|                |                    |                   |                   |           |
| Much<br>Better | A little<br>better | About the<br>same | A little<br>worse | Backwards |