

**PRACTICES AND PERCEPTIONS OF INTRODUCTORY OHS  
EDUCATION IN SECONDARY SCHOOLS – TOWARDS A  
CONCEPTUAL FRAMEWORK FOR EFFECTIVE OHS  
EDUCATION FOR YOUNG WORKERS**

**Nasreen Jahan**

MBBS, MPH, MScTech (OHS)

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The Discipline of Public Health, Faculty of Health Sciences  
The University of Adelaide  
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## **DECLARATION**

I, Nasreen Jahan, hereby declare that, this work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and to the best of my knowledge and belief, contains no material previously published or written by another person, except where acknowledged in the text.

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**Nasreen Jahan**

## **DEDICATION**

This thesis is dedicated to the memories of my loving parents Md. Ramzan Ali Khan and Gulzar Nahar Khanam for their endless love, support, encouragement and giving me the strength to reach for the stars and chase my dreams.

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# **ABSTRACT**

## **Background**

Despite the evidence of significant under-reporting, young workers are over-represented in injury statistics. Possible reasons for higher injury rates include lack of skill due to inexperience, cognitive and emotional immaturity, inadequate training and supervision, and unfamiliarity with working requirements and safe operating procedures. This may also include incomplete physical development for physically demanding work and unsafe behaviours due to peer pressure or risk-taking tendencies.

There is a body of evidence indicating an association between occupational health and safety (OHS) training and a lower incidence of workplace injuries, but other research indicates that young workers often receive little or no training. The limited knowledge among young people about workplace hazards, together with inconsistency in the provision of workplace OHS training indicate a need for introductory OHS education in schools. Ideally such education should be complementary to that provided in workplaces, in the community and in the home by parents. Key informants of the situation in schools are the teachers themselves. However, teacher perspectives, as well as parent perspectives have received little attention in the literature.

In order to contextualise the issues, as part of the preliminary work of this research, a statistical review of young worker injury experience over a ten year period in South Australia was undertaken. A significantly higher rate of injury among young males was found, along with higher rates for 15-19 year olds compared with 20-24 year old workers.

An international literature review of school-based OHS education programs was carried out, which revealed a shortage of evaluation studies. The literature review was then extended to systematically examine workplace-based training in the hospitality and food retailing sectors, where a high proportion of young people are employed. The findings suggested the importance of relevance, co-learning, and mode of delivery of training particularly participatory engagement.

It is evident that there are significant knowledge gaps, not only about the elements of effective OHS education, but also how they are seen (perspectives) and operationalized (practices) by the various stakeholders.

Thus the objectives of the research are twofold: Firstly, to survey current school-based introductory OHS teaching practices as well as the perspectives of teachers and parents: Secondly, to analyse and synthesize the findings and ideas to develop a conceptual framework for effective OHS education for young workers.

## **Methods**

A mixed methods approach was used – namely a questionnaire survey of teachers and interviews with parents. Following focus group discussions with teachers and school-to-work advisors, a questionnaire was developed. The participants of the survey comprise teachers from all public, independent and catholic schools providing secondary education in South Australia (n=211). Questions on current practice, teachers' perceptions and barriers and incentives were included. Potential predictors of effective safety education were examined, and were grouped in terms of teacher-, school- and teaching-related variables. Bivariate and multivariate statistical analyses were undertaken with SPSS.

Telephone interviews with parents of year 11 students were carried out, with recruitment via information in school newsletters. The participants were invited to respond to a series of semi-structured questions relating to parents' perceptions, opinions, views and expectations on the OHS education provided by their child's school. The transcribed data were analysed with NVivo to identify themes, patterns and contents.

## **Results**

### *Teacher questionnaire survey*

Responding teachers (n=156) had a variety of backgrounds and experiences with an average of 21 years of teaching experience and 9 years of experience teaching OHS. They also taught subjects from all areas of the curriculum. Almost half (48%) of the teachers came from the pool of general teachers with various responsibility including teaching other mainstream subjects. Sixteen percent (16%) of teachers providing OHS education had not been trained in OHS.

Despite there being State guidelines and resource materials, a variety of approaches was reported. OHS education is commonly delivered in years 11 and 12 as part of VET subjects or apprenticeship training. More generally it is delivered to year 10 students prior to work placements, at the beginning of the year or term. Almost 90% of teachers taught OHS for less than 10 hours per year. The majority of teachers gave tests or assignments for which successful completion was required prior to work placements.

Three quarters of teachers considered the content both accessible and appropriate for the developmental level and capabilities of most students. Some of the respondents commented that teaching materials often contained too much information specifically related to theory and legislation, resulting in poor student response. In terms of the usefulness of resources, guest lecturers were given the highest rating.

More than half of the teachers (56%) who indicated negative or mixed responses from students, suggested that students find OHS education “boring”, “dull” or “dry” from too much information and text, particularly that relating to theory and legislation. Reported barriers to OHS education were limited time availability due to the demands of a ‘crowded curriculum’, resource issues and lack of consistency.

The age of teachers (>45 years), years of overall teaching and years of teaching occupational safety were significantly associated with positive student response. It was also found that there are significant associations between (i) use of videos and students’ knowledge gain; (ii) use of case studies and student engagement and participation (in public schools only) and (iii) years of overall teaching and teachers reporting the concepts as easy to teach. On the other hand, sharing own experience was negatively associated with positive student response.

The results of multivariate analyses involving the outcomes relating to effective learning and teaching show that there were significant association between use of videos and gain of knowledge by students (adjusted odds ratio, 2.94), public sector school (AOR, 2.60) and use of case studies (AOR, 2.17) with student engagement and participation. There was also a strong association, though not statistically significant, between years of teaching experience (more than 20 years) (AOR, 3.04) and positive student response. The teachers who reported that the quality of education is compromised due to other demands were less likely (AOR = 0.48) to report the concepts as easy to teach.

### *Parents' interviews*

Parents (n=11) were largely unaware of any school-based preparatory OHS program. Some of them were aware about safety education as part of the relevant subjects in schools. Parents' views about OHS focused on common sense and safe work practices. Parents thought OHS meant wearing appropriate footwear, school uniform, goggles, hat, clothing and other personal protective equipment (PPE). They seemed to be unsure if the present school OHS education had any effect on their acquiring knowledge and skills for safety in work settings.

A few parents said that incorporation of OHS into the curriculum is important, but it should be precise and specific, so that their children need not spend a lot of time on this, and that it does not detract from their primary objective of having effective mainstream education. From parents' perspectives, the people who are in best placed to provide OHS education were not necessarily teachers. However, they acknowledged that teachers could be the providers if they had the required knowledge and training. Concerns were expressed regarding inadequate training of teachers who deliver OHS education in their child's school.

On the basis of the quotations and data, parents had a very narrow and common-sense view of what OHS is which is not in line with the view of teachers. Although parents seemed disinterested in OHS education in schools, they did care about their child's safety at school, both in the class room in relevant subjects, and on school premises, and in workplaces.

### **Discussion and Implications**

Time constraints and the lack of standardization were the two most commonly identified challenges by the teachers engaged in the provision of OHS education. Development of a standard set of guidelines may assist in addressing both of these challenges. In terms of teaching methods, the survey, and other studies, suggests that those that are engaging, interactive and face-to-face are most effective.

Although parents admitted that they knew very little about their child's school's OHS initiatives, they are an important influence on their children's learning experience and they are the dominant force in the lives of these children as they prepare for future work. Consequently addressing parents' understanding is an important aspect of effective learning for students.



A little less than half (44%) of teachers indicated that students responded positively to OHS education and this may result in a positive change in safety behaviours. However, further work is needed to validate this prediction – i.e. direct investigation with the students and carefully designed research to understand the effect of the OHS education on the students’ actual OHS behaviour in workplace situations. It is also important that future OHS education initiatives be subject to rigorous evaluation.

The findings have implications for the way OHS education in the schools is delivered. It is evident from the findings that the concepts of OHS education may vary according to the stakeholder. In addition to addressing community expectations, there is a possibility that the programs would need to be tailored to address the perspectives of different stakeholders. In addition, there should be a partnership between schools and industry, such that knowledge and skills introduced at school are complemented and reinforced in the workplace.

The findings from the reviews and empirical research lead to a conceptual framework. The framework specifies key contributors to OHS education and their inter-relationships. It describes effective education principles for young people, such as relevance, assessment and self-efficacy, but adapted to the time course of physical and psychosocial development, and the learning opportunities in the school and workplace environments. The framework identifies the need for an evidence-based and socially acceptable standard of OHS education to deliver by schools to students at the age of first entry in the workplace. Such a standard can provide a foundation for future training based in the workplace, but should be informed by parent perspectives, and may require additional teacher training. It should facilitate progressive learning from primary school through to professional and vocational education sectors.

## **LIST OF ABBREVIATIONS**

ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum Assessment and Reporting Authority
AIHW	Australian Institute of Health and Welfare
ASCC	Australian Safety and Compensation Council
DECD	Department for Education and Child Development
DECS	Department for Education and Children Services
DEEWR	Department of Education, Employment and Workplace Relations
EU-OSHA	European Agency for Safety and Health at Work
HREC	Human Research Ethics Committee
HWSA	Heads of Workplace Safety Authorities
ILO	International Labour Organization
IWH	Institute of Work and Health
NHMRC	National Health and Medical Research Council
NIOSH	National Institute for Occupational Safety and Health
OHS	Occupational Health and Safety
OHS&W	Occupational Health, Safety and Welfare
OHSW	Occupational Health, Safety and Welfare
PE	Physical Education
PLP	Personal Learning Plan
SACE	South Australian Certificate of Education

SPSS	Statistical Package for the Social Sciences
SWA	School-to-Work Advisors
SWL	Structured Workplace Learning
SWSA	Safe Work SA
VET	Vocational Education and Training
WHO	World Health Organisation

## TABLE OF CONTENTS

<b>DECLARATION .....</b>	<b>ii</b>
<b>DEDICATION .....</b>	<b>iii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iv</b>
<b>ABSTRACT.....</b>	<b>v</b>
<b>LIST OF ABBREVIATIONS .....</b>	<b>x</b>
<b>THESIS OVERVIEW .....</b>	<b>xxi</b>
<b>CHAPTER 1 THE RESEARCH CONTEXT .....</b>	<b>1</b>
<b>1.1 Overview .....</b>	<b>1</b>
<b>1.2 Description of the target population – Australia’s young workers .....</b>	<b>1</b>
1.2.1 Characteristics of young workers.....	1
1.2.2 Young workers’ participation in the Australian workforce .....	2
1.2.3 Behaviour and circumstances of young workers .....	2
<b>1.3 Health and safety for young workers: A situation analysis. ....</b>	<b>3</b>
1.3.1 Young workers’ injury experience in Australia .....	4
1.3.1.1 Statistical review: Young worker injury experience in South Australia (1998–2007).....	4
1.3.1.1.1 Background .....	5
1.3.1.1.2 Methods .....	6
1.3.1.1.3 Results .....	6
1.3.1.1.4 Discussion .....	11
<b>1.4 What has been done and the domains of preventive activity.....</b>	<b>12</b>
1.4.1 Structural (Legislation) .....	13
1.4.1.1 Proposed Child Employment Laws for South Australia.....	13
1.4.2 Enforcement (Regulation).....	14
1.4.3 Educational .....	14
1.4.4 Awareness (for employers and community) .....	15
<b>1.5 Role of education on occupational health and safety .....</b>	<b>16</b>

<b>1.6</b>	<b>Conclusions .....</b>	<b>17</b>
<b>CHAPTER 2</b>	<b>LITERATURE REVIEW .....</b>	<b>18</b>
<b>2.1</b>	<b>Overview .....</b>	<b>18</b>
<b>2.2</b>	<b>A general literature review of OHS education and training for young workers with a focus on school-based interventions .....</b>	<b>18</b>
2.2.1	Introduction .....	18
2.2.2	Methods .....	18
2.2.3	Results .....	20
2.2.3.1	Literature on existing school-based OHS education .....	20
2.2.3.2	An overview of health issues of young workers.....	28
2.2.3.2.1	Factors influencing health of the young workers.....	28
2.2.3.2.2	Young workers' Safety perceptions .....	30
2.2.3.3	Recognition of the importance of school-based OHS education.....	31
2.2.3.4	The need for evaluation of school-based OHS education .....	32
2.2.3.5	Role of schools in OHS education .....	34
2.2.4	Conclusion .....	35
<b>2.3</b>	<b>A systematic review of elements of effective OHS education, examining the literature in hospitality and food retail trade industries .....</b>	<b>36</b>
2.3.1	Background and research question .....	36
2.3.2	Methodology.....	38
2.3.2.1	Search strategy- electronic databases .....	39
2.3.2.2	Inclusion criteria.....	40
2.3.2.3	Reasons for exclusion of articles.....	41
2.3.3	Results of review .....	42
2.3.3.1	Content of training: .....	47
2.3.3.2	Mode of training delivery.....	47
2.3.3.3	Structural/organizational elements .....	47
2.3.3.3.1	Involvement of managers and co-workers in the training: .....	47
2.3.3.3.2	Supportive workplace environment.....	48
2.3.3.3.3	Assessment of training and constant supervision: .....	48
2.3.3.4	Stakeholders' views and participation.....	49
2.3.3.4.1	Workers' perceptions about training: .....	49
2.3.3.4.2	Incorporating parents' views and involvement of policy makers:.....	49
2.3.4	Discussion and conclusions .....	49
<b>2.4</b>	<b>Conclusions .....</b>	<b>51</b>

<b>CHAPTER 3 A SURVEY ON INTRODUCTORY OHS EDUCATION IN SECONDARY SCHOOLS: CURRENT PRACTICES AND TEACHERS' PERSPECTIVES .....</b>	<b>53</b>
<b>3.1 Overview .....</b>	<b>53</b>
<b>3.2 Introduction and Research Questions .....</b>	<b>53</b>
<b>3.3 Methodology .....</b>	<b>54</b>
3.3.1 Study population .....	55
3.3.2 Development of survey tool.....	55
3.3.2.1 Inputs from the focus group discussion in the development of the survey instrument.....	55
3.3.2.2 Piloting the questionnaire .....	57
3.3.3 Ethics approval .....	59
3.3.4 Survey implementation .....	59
3.3.4.1 Identification of SA schools .....	59
3.3.4.2 Preparation & distribution of survey package .....	60
3.3.4.3 Follow-up with schools .....	60
3.3.5 Data processing and management.....	60
3.3.5.1 Variables created from open questions and Likert scales.....	61
3.3.6 Data analysis.....	63
<b>3.4 Results .....</b>	<b>64</b>
3.4.1 Descriptive statistics .....	65
3.4.1.1 Teacher demographics and background (Teacher variables) .....	65
3.4.1.2 Current practice of OHS.....	68
3.4.1.2.1 Use of resources .....	69
3.4.1.2.2 Delivery methods .....	70
3.4.1.2.3 Time of delivery of OHS education .....	70
3.4.1.2.4 Total time spent in teaching OHS.....	71
3.4.1.2.5 Tests, assignments and Students assessment .....	72
3.4.1.3 Teachers' perspectives .....	72
3.4.1.3.1 Importance and reasons for supporting OHS teaching .....	72
3.4.1.3.2 Teachers' perspectives on OHS resources.....	74
3.4.1.3.3 Teachers' views on OHS teaching and Student learning (Outcome Variables) .....	77
3.4.1.4 Reach of OHS education among students .....	82
3.4.1.5 Feedback from parents .....	82
3.4.1.6 Teachers' perspectives on school environment.....	83
3.4.2 Analytical Statistics .....	94

3.4.2.1	Cross-tabulations of the factors associated with positive learning outcomes (as perceived by the teachers) .....	94
3.4.2.2	Analysis of the factors associated with effective learning and teaching (Bivariate analysis) ...	97
3.4.2.3	Multivariate logistic regression analysis of the factors associated with effective learning and teaching .....	99
<b>3.5</b>	<b>Discussion.....</b>	<b>101</b>
3.5.1	Rationale and importance of the survey.....	101
3.5.2	Choice, development and implementation of method.....	102
3.5.3	Discussion of main findings .....	103
3.5.3.1	Teacher demographics, experience and training .....	103
3.5.3.2	Current practice .....	103
3.5.3.2.1	Use of resources .....	103
3.5.3.2.2	Delivery methods .....	104
3.5.3.3	Teacher perspectives .....	105
3.5.3.3.1	Content, usefulness of the resources, accessibility and appropriateness .....	105
3.5.3.3.2	Engaging students and changing attitudes/beliefs .....	106
3.5.3.3.3	Barriers and suggestions for improvement of OHS teaching .....	106
3.5.4	Discussion on findings of analytical statistics .....	108
3.5.5	Strengths and weaknesses .....	109
<b>3.6</b>	<b>Conclusions .....</b>	<b>110</b>
<b>CHAPTER 4</b>	<b>PARENTS' PERSPECTIVES ON SCHOOL-BASED OHS</b>	
<b>EDUCATION</b>	<b>.....</b>	<b>111</b>
<b>4.1</b>	<b>Introduction.....</b>	<b>111</b>
<b>4.2</b>	<b>Background.....</b>	<b>111</b>
<b>4.3</b>	<b>Methodology .....</b>	<b>113</b>
4.3.1	Introduction .....	113
4.3.2	Birth of research question .....	114
4.3.3	Participants .....	115
4.3.4	Procedure.....	115
4.3.4.1	Choice of telephone interview.....	115
4.3.4.2	Sampling strategy, sample size and research instrument.....	116
4.3.4.3	Developing interview schedule .....	116
4.3.4.4	Piloting the interview schedule .....	118
4.3.4.5	Data Collection.....	118
4.3.4.6	Data analysis .....	119

4.3.4.7	Reflexivity.....	122
4.3.4.8	Ethical Considerations.....	124
<b>4.4</b>	<b>Results .....</b>	<b>125</b>
4.4.1	What is Occupational Health and Safety for parents? .....	125
4.4.1.1	Common sense and safe work practices .....	125
4.4.1.2	Using protective equipment .....	127
4.4.1.3	Awareness about safety policies in school and workplaces .....	128
4.4.2	What do they know about school-based OHS education? .....	129
4.4.3	How did parents' OHS definition shape parents' views about OHS education? .....	131
4.4.3.1	What should be done? .....	132
4.4.3.2	Where do they think OHS should be delivered? .....	133
4.4.3.3	Who do they think should do it? .....	135
4.4.3.4	When should it be done? .....	137
4.4.3.5	How parents construct their ideas about OHS.....	138
<b>4.5</b>	<b>Discussion.....</b>	<b>140</b>
<b>4.6</b>	<b>Strengths and Limitations of study.....</b>	<b>142</b>
<b>4.7</b>	<b>Conclusions .....</b>	<b>142</b>
<b>CHAPTER 5</b>	<b>GENERAL DISCUSSION .....</b>	<b>144</b>
<b>5.1</b>	<b>Overview .....</b>	<b>144</b>
<b>5.2</b>	<b>Significance of the research findings .....</b>	<b>145</b>
<b>5.3</b>	<b>Main findings in the context of other published work .....</b>	<b>146</b>
5.3.1	Statistical review (Chapter 1) .....	147
5.3.2	Literature reviews (Chapter 2).....	147
5.3.3	Teachers' survey (Chapter 3).....	148
5.3.3.1	Process of OHS education delivery .....	148
5.3.3.2	Lack of teachers' training on OHS education .....	149
5.3.3.3	Use and usefulness of resources .....	150
5.3.3.4	Content, accessibility and appropriateness of resources.....	150
5.3.3.5	Complementary roles for school and industry.....	152
5.3.3.6	Integration of OHS into the curriculum.....	153
5.3.3.7	Barriers and incentives .....	154
5.3.4	Stakeholders' perspectives (Chapter 3 and Chapter 4) .....	155
5.3.4.1	Teacher's perspectives (Chapter 3).....	155



5.3.4.2	Parents understanding about OHS education in school (Chapter 4).....	158
5.3.4.3	Difference and concordance of views and perceptions of the stakeholders .....	159
<b>5.4</b>	<b>Strengths and limitations .....</b>	<b>160</b>
5.4.1	Strengths of the research .....	160
5.4.2	Limitations of the research .....	161
<b>5.5</b>	<b>Conclusions .....</b>	<b>162</b>
<b>5.6</b>	<b>The Conceptual Framework for effective introductory OHS education .....</b>	<b>162</b>
5.6.1	Development of a conceptual framework .....	163
5.6.2	The elements of the conceptual framework .....	166
5.6.2.1	Who is involved in OHS Education? .....	166
5.6.2.2	Who should actually be teaching? .....	168
5.6.2.3	When it should be taught? .....	168
5.6.2.4	What and how should it be taught? .....	169
<b>CHAPTER 6</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>171</b>
<b>6.1</b>	<b>Overview .....</b>	<b>171</b>
<b>6.2</b>	<b>Summary of findings and conclusions .....</b>	<b>171</b>
<b>6.3</b>	<b>Future research needs .....</b>	<b>173</b>
<b>6.4</b>	<b>Recommendations .....</b>	<b>173</b>
<b>REFERENCES.....</b>		<b>176</b>
<b>APPENDICES .....</b>		<b>196</b>
<b>Appendix 1: Survey Questionnaire .....</b>		<b>197</b>
<b>Appendix 2: Ethics approval letters .....</b>		<b>203</b>
<b>Appendix 3: Cover letter for Principals of the Schools .....</b>		<b>213</b>
<b>Appendix 4: Letter to teachers .....</b>		<b>215</b>
<b>Appendix 5: OHS education by teacher’s age, gender, role, training, use of resources and school sectors .....</b>		<b>217</b>
<b>Appendix 6: Letter to the principal.....</b>		<b>226</b>

<b>Appendix 7: Flyer for the school newsletter .....</b>	<b>228</b>
<b>Appendix 8: Interview schedule .....</b>	<b>230</b>
<b>Appendix 9: List of tree nodes .....</b>	<b>235</b>
<b>Appendix 10: Publications generated from this research.....</b>	<b>237</b>

## LIST OF FIGURES

Figure 1.1: Serious claims by age group and year .....	7
Figure 1.2: Serious claims by gender and year .....	7
Figure 1.3: Injury over time by age group .....	8
Figure 1.4: Injury over time by gender .....	8
Figure 1.5: Young workers' injury claims by body location, 2007 .....	9
Figure 1.6: Young worker injury claims for five major industry categories .....	10
Figure 1.7: Injury claims over time for two industry categories with a high proportion of young workers.....	11
Figure 2.1: Proportion of young workers per sector .....	37
Figure 2.2: Employment in the Accommodation, Cafes & Restaurants industry division, S.A., 1992 to 2007 .....	38
Figure 2.3: Process of selection of articles for the review .....	42
Figure 3.1: Total time spent in teaching OHS per year .....	71
Figure 4.1: Data Analysis Framework .....	122
Figure 5.1: A conceptual model of workplace training interventions for primary prevention in OHS .....	164
Figure 5.2: Linkages between parental and co-worker risk taking and work injury .....	165
Figure 5.3: Influence of the contributors in OHS educational framework .....	167
Figure 5.4: Timing of OHS education provision and steps .....	168
Figure 5.5: OHS education from primary to tertiary level .....	169
Figure 5.6: Complementary roles of schools and industries.....	170

## LIST OF TABLES

Table 2.1: International review and evaluation of OHS education and interventions .....	21
Table 2.2: Keywords used to identify relevant articles .....	40
Table 2.3: Review of OHS education and interventions in the hospitality and food retailing sectors .....	44
Table 3.1: Number of schools in each sector .....	59
Table 3.2: List of recoded variables.....	62
Table 3.3: Survey response rate .....	65
Table 3.4: Teacher demographics and background .....	67
Table 3.5: Use of resources by the teachers.....	69
Table 3.6: Methods of OHS delivery by the respondents.....	70
Table 3.7: Time of delivery of OHS education .....	71
Table 3.8: Reasons for supporting OHS education in secondary schools .....	73
Table 3.9: Usefulness of the websites resources.....	74
Table 3.10: Usefulness of the non-websites resources .....	75
Table 3.11: Teachers' perspectives on accessibility and appropriateness of OHS resources...76	
Table 3.12: Comments and suggestions for additional teaching resources .....	77
Table 3.13: Teachers' views on OHS teaching and student learning .....	77
Table 3.14: Teachers' perspectives on school environment.....	84
Table 3.15: Barriers to the effective OHS teaching.....	85
Table 3.16: Suggestions for improvement of OHS teaching .....	89
Table 3.17: Teachers' perception of effective learning by gender .....	95
Table 3.18: Teachers' perception of effective learning by age categories .....	95
Table 3.19: Teachers' perception of effective learning by roles .....	96
Table 3.20: Perceptions of teachers with formal OHS training.....	96
Table 3.21: Factors associated with effective learning and teaching - bivariate .....	98
Table 3.22: Factors associated with effective learning and teaching - multivariate.....	100

## **THESIS OVERVIEW**

This thesis takes a mixed method approach to understanding current practices of school-based OHS education and the perspectives of teachers and parents to introductory OHS education.

### **Research questions**

This study addresses the following questions developed from literature review and statistical review.

- 1 What are the practices and teacher perceptions of introductory OHS education in secondary schools of South Australia? Specifically,
  - 1.1. What is the current practice of introductory OHS education in South Australian secondary schools?
  - 1.2. What are the teacher perspectives on school-based OHS education?
  - 1.3. What teaching/school factors are associated with positive learning outcomes (as perceived by the teachers)?
- 2 How do parents understand OHS education in secondary schools?

The findings of the research and other literature suggest the development of a conceptual framework for effective OHS education for young workers.

The structure of this thesis is as follows:

### **Chapter 1 The Research Context**

This chapter provides an account of young workers' health and safety issues, community/industry responses and injury rates in South Australia for a 10-years period (1998-2007).

### **Chapter 2 Literature Review**

This chapter provides the background to the development of the research questions. This includes a review of existing OHS education for young workers, particularly in high schools, highlighting current efforts and progress made towards finding solutions to the problems that are discussed in chapter 1. Moreover, the chapter focuses on education as a preventive activity in secondary schools in particular and concludes with questions for subsequent chapters.

Taken together, chapters 1 and 2 describe schools' role in OHS education and suggest that the providers of mainstream education in schools can play a vital role in the provision of introductory OHS education by reaching young people on a large scale.

### **Chapter 3 A Survey on Introductory OHS Education in Secondary Schools: Current Practices and Teachers' Perspectives**

This long chapter is an account of a cross-sectional survey of teachers conducted to investigate the current practice of OHS education in South Australian high schools. The other important areas related to school-based OHS education are also explored. They include the perspectives of teachers about the OHS education and the factors associated with positive learning outcomes. This survey involves high school teachers from all public, independent and Catholic schools from both metropolitan and rural areas.

The findings from the survey revealed that the teaching methods should be engaging, interactive, and should incorporate case studies and class discussion. The content and delivery mode of OHS education should be appropriate for young workers. There are other range of aspects of this research may be considered worth exploring. For example, OHS education relating to the type of teachers, kind of resources used by different types of teachers, OHS education by teacher age, gender, training.

### **Chapter 4 Parents' Perspectives on School-based OHS Education**

The main purpose of this chapter is to explore school-based OHS education from the perspective of parents. The chapter describes a qualitative study involving parents of year 11 students to gain an in-depth understanding of their views and perceptions regarding OHS education. The chapter critically examines OHS from a parent's point of view and demonstrates how occupational health and safety is defined by parents and what they think is important.

### **Chapter 5 General Discussion**

This chapter summarises the findings from previous chapters regarding practices and perceptions on school-based OHS education and compares the findings revealed by different methods in the context of other published work. It also discusses the importance of these findings within the framework of Australian school-based OHS education and young people.

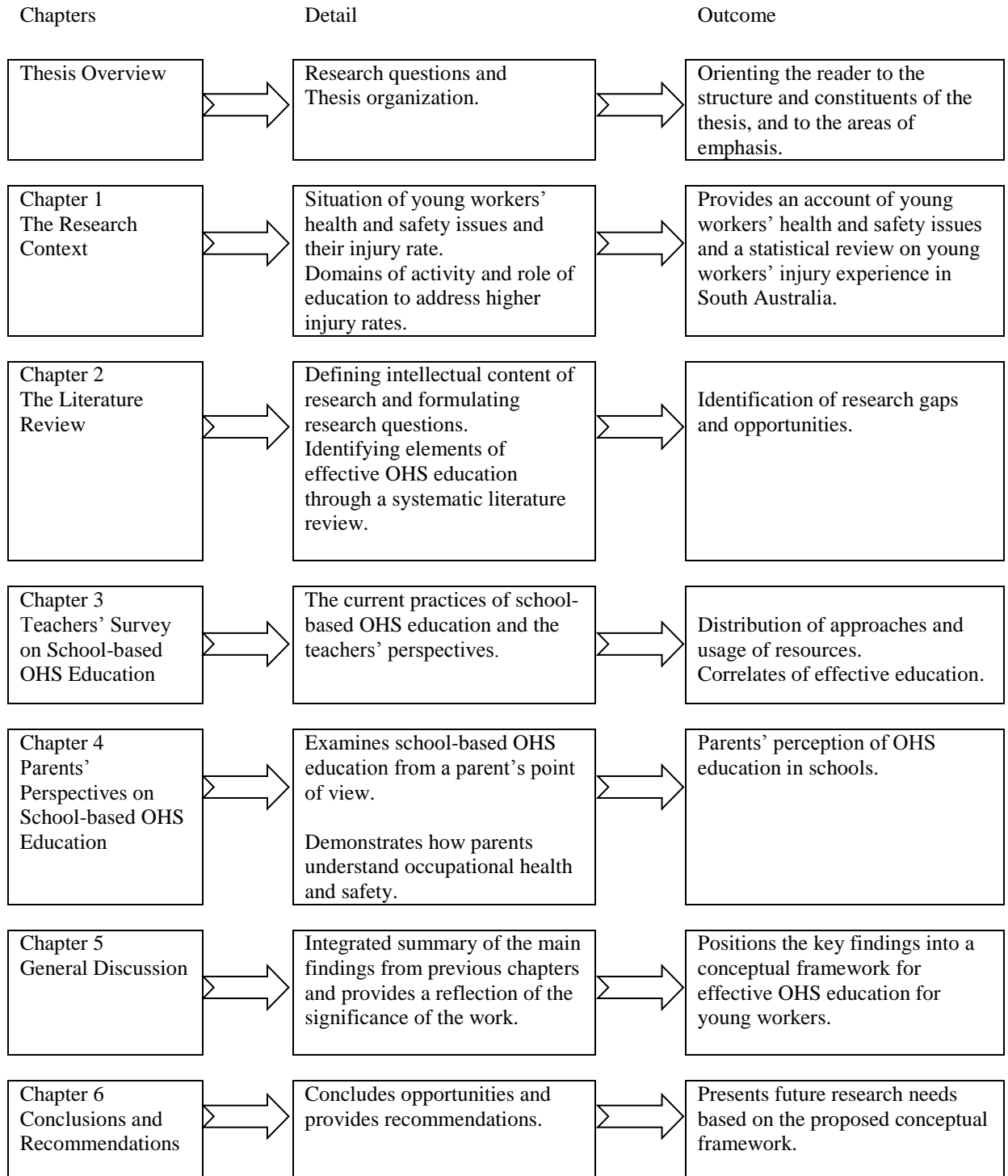
It presents an appraisal of strengths and weaknesses of the work and a reflection of the significance of the work. Finally, it develops a conceptual framework of effective OHS education drawing on the findings of this thesis and other sources of literature.

## **Chapter 6 Conclusions and Recommendations**

This chapter concludes the findings of this study and suggests future research needs and provides recommendations in order to address the high injury rate among young workers.

## SUMMARIES OF THESIS CHAPTERS

The following is a diagrammatic overview of the thesis.



### Layout of the thesis