

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**Technology Education and Industry Links: An exploratory case  
study.**

A thesis submitted in partial fulfilment  
of the requirements for the degree of Masterate in Education at Massey  
University.

**Gary Christopher O'Sullivan**

**2001**

## ABSTRACT

The purpose of this research is to provide an exemplar of one school's innovative approach to developing links with local industry in order to enrich its technology education programme. Investigation of the rationale and policy for having such a link is discussed and possible benefits and deficits are presented in a case study.

The research has been undertaken in one school which has won national awards for its involvement in these links. This school is the focus of an exploratory and evaluative case study. A variety of procedures has been used including a document analysis, teacher and student interviews and a small questionnaire. The data has been gathered from the principal, the classroom teacher, the industry person and the fourteen children involved in the link.

The technology curriculum was introduced as a compulsory part of the New Zealand curriculum framework for schools in January 1999. It was appropriate that this research should be carried out at the same time. This research also investigates the introduction of the new curriculum. Questions such as, what is technology education? and, where has it come from?, are addressed. Identified as important aspects of this new curriculum are the links to be developed with the local community which include business and industry, tertiary institutions, and local authorities. It is proposed that these links could work together to develop what is described as an "*inclusive*" technology curriculum.

A case study of an existing school-industry link is reported. Interested parties are identified, their perceptions and the possible underlying principles behind their visions are discussed. This investigation explores the notion of an inclusive technology curriculum and discusses in the light of the case study whether it is feasible or even desirable.

## ACKNOWLEDGEMENTS.

I would like to sincerely express my gratitude to my supervisor Professor John Codd for his thoughtful and thorough assistance from conception to completion of this thesis.

I would also like to thank my many colleagues those from within Massey University College of Education and those of the wider community of technology educators who entered into lively debate with me on some of the issues raised, but always maintained their support of my endeavours.

To my wife and children whose encouragement and support has been unconditional and inspirational, my heartfelt thanks.

Finally I wish to acknowledge the staff students employers and employees who voluntarily gave of themselves and their time to enable this study to take place.

# TABLE OF CONTENTS

	<b>Page:</b>	
<b>ABSTRACT</b>	2	
<b>ACKNOWLEDGEMENTS</b>	3	
<b>CANDIDATE'S STATEMENT</b>	4	
<b>TABLE OF CONTENTS</b>	5	
<b>LIST OF FIGURES</b>	8	
<b>LIST OF TABLES</b>	8	
 <b>CHAPTER ONE - Introduction to the study</b>		
1.1	The researcher's interests	9
1.2	Background to the study	10
1.3	Research objectives	11
1.4	Research Method	12
1.5	Organisation of the Thesis	13
 <b>CHAPTER TWO - Review of the Literature parts A &amp; B</b>		
 <b>PART A</b>		
2.1	Definitions	14
2.2	Why technology education?	27
2.3	Technology education & links internationally	33
2.4	School-industry links: theoretical assumptions	47

## **PART B**

2.5	A New Zealand perspective	55
2.6	Technology education in New Zealand: bright future or repackaged past?	58
2.7	The economic growth argument	66
2.8	The employment argument	68
2.9	Making the connection between technology education and industry	76
2.10	Conclusion	84

## **CHAPTER THREE - Methodology**

3.1	Case study argument	86
3.2	The research study school	101
3.3	Ethical considerations	103
3.4	The research phases	106
3.5	Conclusion	107

## **CHAPTER Four - Results**

4.0	Document analysis	109
4.1	Observations	114
4.2	Individual interviews	120
	ii Interview 1 class teacher	
	ii Interview 2 principal	
	iii Interview 3 class teacher	
	iv Interview 4 industry link person	
4.3	Focus group interviews	127
4.4	Small scale questionnaire	141

## **CHAPTER FIVE – Discussion**

<b>5.1</b>	<b>Student viewpoint</b>	<b>146</b>
<b>5.2</b>	<b>Teacher viewpoint</b>	<b>148</b>
<b>5.3</b>	<b>Principal viewpoint</b>	<b>149</b>
<b>5.4</b>	<b>Industrial link viewpoint</b>	<b>150</b>

## **CHAPTER SIX – Conclusion** **151**

<b>6.1</b>	<b>Implications for policy and practice</b>	<b>157</b>
<b>6.2</b>	<b>Limitations of this study</b>	<b>158</b>
<b>6.3</b>	<b>Further research</b>	<b>159</b>
<b>6.4</b>	<b>Final remarks</b>	<b>160</b>

## **REFERENCES** **161**

## **APPENDICES**

<b>1.</b>	<b>Outline of technology statement</b>	<b>171</b>
<b>2.</b>	<b>Essential skills</b>	<b>172</b>
<b>3.</b>	<b>Letter to the principal</b>	<b>173</b>
<b>4.</b>	<b>Observation form</b>	<b>174</b>
<b>5.</b>	<b>Industry handout</b>	<b>175</b>
<b>6.</b>	<b>Principal's survey</b>	<b>176</b>
<b>7.</b>	<b>Teacher's survey</b>	<b>177</b>
<b>8.</b>	<b>Pupils Survey</b>	<b>178</b>

## **LIST OF FIGURES:**

<b>Figure 1:</b>	<b>Kimbell's hands and minds</b>	<b>19</b>
<b>Figure 2:</b>	<b>Pacey's technological practice</b>	<b>21</b>
<b>Figure 3:</b>	<b>Wright's technological literacy levels</b>	<b>24</b>
<b>Figure 4:</b>	<b>Rationale for technology education</b>	<b>41</b>
<b>Figure 5:</b>	<b>Hoare's breakdown of involvement</b>	<b>74</b>
<b>Figure 6:</b>	<b>Industry visits comparison</b>	<b>81</b>
<b>Figure 7:</b>	<b>Walker's field notes evaluation</b>	<b>97</b>

## **LIST OF TABLES:**

<b>Table 1:</b>	<b>Response to question 1</b>	<b>141</b>
<b>Table 2:</b>	<b>Response to question 2</b>	<b>142</b>
<b>Table 3:</b>	<b>Response to question 3</b>	<b>142</b>
<b>Table 4:</b>	<b>Response to question 4</b>	<b>142</b>
<b>Table 5:</b>	<b>Response to question B1</b>	<b>143</b>
<b>Table 6:</b>	<b>Response to question B2</b>	<b>143</b>
<b>Table 7:</b>	<b>Response to question B3</b>	<b>144</b>
<b>Table 8:</b>	<b>Response to question B4</b>	<b>144</b>
<b>Table 9:</b>	<b>Response to question B5</b>	<b>145</b>