

Table of Contents

Acknowledgement	vi-vii
Dedication	viii
List of appendices and figures	ix
List of tables	x
English abstract	xi-xii
Arabic abstract	xiii-xiv
CHAPTER 1: Introduction and Theoretical Background	
1.1 Introduction	1-2
1.2 Theoretical background	2-7
1.3 Statement of the problem	7
1.4 Aims	7-8
1.5 Research questions	8-9
1.6 Significance of the study	9-10
1.7 Definitions	11-12
1.8 Limitations	12
CHAPTER 2: Literature Review	
2.1 Literature review of self-study	13-16
2.2 Why self-study?	16-20
2.3 Concerns and criticism of self-study research	20-23
2.4 Self-study influence on teacher program reconceptualization	24-29
2.5 Literature review of cooperative learning	29-31
2.6 Teacher development and jigsaw studies in Palestine	31-33
CHAPTER 3: Methodology and Study Design	

3.1 Research methodology	34-35
3.2 The participants, context of the study	35
3.3 Research procedures	35-38
3.4 Instruments of data collection	39
3.4.1 Pre-test	39
3.4.2 Post-test	39-40
3.4.3 My journal	40
3.4.4 A set of questions about beliefs in science teaching	41
3.4.5 Videotapes and photographs	41
3.4.6 Students' reflections on the jigsaw-method	41
3.4.7 Pamphlets	41
3.5 Tests validity	42
3.6 Post-test reliability	42
3.7 Data analysis procedures	42-45
 CHAPTER 4: Findings and Results	
4.1 Teacher professional development	46-56
4.2 The jigsaw method	56
4.2.1 The impact on student achievement	56-58
4.2.2 The effects on students' attitudes toward learning science	58-60
4.2.3 The effects on students' learning and social skills	60-63
4.3 The interaction between prior achievement and jigsaw	63-66
 CHAPTER 5: Discussion	
5.1 Introduction	67-69
5. 2 Discussion of the professional development themes	69-77
5. 2.1 Conclusion	77

5.3 Discussion of the jigsaw experiment findings	78
5.3.1 Introduction	78
5.3.2 Discussion of the impact of the jigsaw method on student achievement, social interactions and attitude toward science	78-84
5.3.3 Summary and Conclusion	84-85
5.4 Recommendations	85-86
REFERENCES	87-95
APPENDICES	96-127