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.

THE

"TEACHING GAMES FOR UNDERSTANDING" PHYSICAL EDUCATION INSTRUCTIONAL MODEL - A COMPARATIVE STUDY INTO THE EFFECTS ON KNOWLEDGE AND GAME PERFORMANCE -

A thesis presented in partial fulfilment of the requirements for the degree of

Master of Education

at Massey University, Turitea, Palmerston North, New Zealand

Leyton Watson

2001

ABSTRACT

This purpose of this study was to investigate the effectiveness of the alternative "Teaching Games for Understanding" (TGFU) instructional model for education in sport and games. The model was compared to a traditional approach to instruction that has been and continues to remain dominant across physical education curriculums. This model is defined as "skill-based" instruction.

The study was undertaken in the naturalistic setting of a New Zealand secondary school with year 10 students. The game adopted for instruction was short tennis. Two classes of students were assigned treatment under one of the instructional models in an eight-lesson unit with a third class assigned as a control. Twenty-two students were tested on declarative knowledge of short tennis rules and scoring, shots/strokes, and strategies in the form of a pre and post written test. Students' pre and post game performance was measured using the Game Performance Assessment Instrument (GPAI). Player performance was coded from video footage to assess tactical court movement and decision-making as well as skill execution.

Declarative knowledge domain results revealed a statistically significant improvement in both treatment groups for overall knowledge. In specific knowledge categories, the TGFU treatment group also improved significantly in skill and strategy related knowledge over instruction time whilst the skill-based group improved significantly in skill-related knowledge only. The TGFU group's skill-related knowledge improvement was also significantly higher than the skillbased group. Game performance results indicated that some improvement was evident in both treatment groups following instruction with a trend for a greater degree of improvement in tactical performance by the TGFU group. However this improvement was not found to be statistically significant for either treatment group or between groups for any GPAI component.

Findings are analysed and discussed in light of previous studies and recommendations are provided for future research into game and sport pedagogy.

ACKNOWLEDGEMENTS

Ethical approval was granted for all research procedures undertaken in this study by the Massey University College of Education Ethics Committee (June, 2001).

Some key people have helped to ensure this research study was possible and successfully completed. Without their help and commitment, the extensive process would have been a lot more difficult to undertake.

I would like to thank my head supervisor Mr Barrie Gordon from the Department of Health and Human Development for his guidance and professional advice. He was always willing to offer continued support and enthusiasm as a supervisor and a friend throughout the course of the study. I would also like to thank my second supervisor Associate Professor Roger Openshaw for his valuable insight and feedback during the year.

A special thanks is offered to the teacher and all the students who participated in the study. Without their co-operation and interest in the testing and teaching, this project would not have been possible.

Thanks are also extended to Dr Duncan Hedderley from the Statistics Research and Consultancy Centre for his expert advice and assistance with the analysis of the research data.

Lastly, a thank you to my family and friends for their support and understanding as I pursued and explored this domain of personal interest.

Leyton Watson December, 2001.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	
List of Figures	iv
List of Tables	vi
CHAPTER ONE: INTRODUCTION	1
CHAPTER TWO: "A TALE OF TWO MODELS"	4
Definition of Terms	5
Instructional Models	6
The Skill-Based Model	7
Why the Technical Focus?	11
Perceived Limitations of the Skill-based Model	13
Teaching Games For Understanding - Structure and Philosoph	y 15
Why Play Games?	25
Game Modification in TGFU	26
TGFU Game Classification	28
CHAPTER THREE. THE PROBLEM	31
TGFU Pedagogical Assumptions	33
Justification for Study	36
Study Purpose	38
CHAPTER FOUR: REVIEW OF LITERATURE	40
Adaptations of TGFU	41
Review of Relevant Studies	45
Authentic Game Performance Measurement	58
Validation of the Game Performance Assessment Instrument (GPAI) 62
Contribution of this Study to the Literature	64

ii

CHAPTER FIVE: METHODOLOGY	67
The Selected Game	67
Participants	67
Treatments	68
Treatment Verification	69
Instruments	71
Construct Validity of the GPAI Component Criteria	80
Data Analysis	81
CHAPTER SIX: RESULTS	84
Declarative Knowledge	85
Game Performance	91
CHAPTER SEVEN: DISCUSSION OF RESULTS	97
Declarative Knowledge	98
Game Performance	103
General Discussion	111
Limitations of the Study	114
CHAPTER EIGHT: CONCLUSIONS AND RECOMMENDATIONS	117
Future Research	118
APPENDICES	121
Appendix A	121
Appendix B	135
Appendix C	148
Appendix D	150
Appendix E	151
Appendix F	152
Appendix G	154
Appendix H	156
BIBLIOGRAPHY	158

iii

LIST OF FIGURES

Figure 1:	A Typical "Teaching Games For Understanding" Lesson Structure	18
Figure 2:	The Game Evolution Model (Bunker & Thorpe, 1982)	18
Figure 3:	Game Classification (Thorpe, Bunker & Almond, 1986)	28
Figure 4:	Attacking and Defensive Court Positions	75
Figure 5:	The Three Court Zones for Tactical Movement of Opponents	77
Figure 6:	Plot of Differences in Pretest and Posttest Scores by Group (Rules and Scoring Knowledge)	85
Figure 7:	Plot of Differences in Pretest and Posttest Scores by Group (Shots/Strokes Knowledge)	87
Figure 8:	Plot of Differences in Pretest and Posttest Scores by Group (Strategy Knowledge)	88
Figure 9:	Plot of Differences in Pretest and Posttest Scores by Group (Overall Declarative Knowledge)	90
Figure 10:	Plot of Differences in Pretest and Posttest GPAI Scores by Group (Adjust)	91

iv

Page

Figure 11:	Plot of Differences in Pretest and Posttest GPAI		
	Scores by Group (Decisions Made)	93	
Figure 12:	Plot of Differences in Pretest and Posttest GPAI		
	Scores by Group (Skill Contact)	94	
Figure 13:	Plot of Differences in Pretest and Posttest GPAI		
	Scores by Group (Skill Execution/Outcome)	95	

v

LIS	TO	FT	FA	BL.	ES
AJAN/				***	

	DIST OF TREES	
		Page
Table 1:	Description of Treatment Validation Instrument	
	(Turner & Martinek, 1992)	52
Table 2:	Description of the TGFU Treatment Validation	
	Instrument	70
Table 3:	Description of the Skill-based treatment Validation	
	Instrument	70
Table 4:	Comparison of GPAI Components Using Independent	
	t-Tests and the Kruskal-Wallis Test With Students	
	Classed as High or Low Ability in Short Tennis Game	
	Performance: A Test of Construct Validity.	81
Table 5:	Means of Pretest and Posttest Raw Scores by Group	
	(Rules and Scoring Knowledge)	85
Table 6:	Paired Sample t-Test Results of Group Pretest and	
	Posttest Scores (Rules and Scoring Knowledge)	85
Table 7:	Means of Score Differences by Group	
	(Rules and Scoring Knowledge)	86
Table 8:	Means of Pretest and Posttest Raw Scores by Group	
	(Shots/Strokes Knowledge)	86
Table 9:	Paired Sample t- Test Results of Group Pretest and	
	Posttest Scores (Shots/Strokes Knowledge)	86
Table 10:	Means of Score Differences by Group	
	(Shots/Strokes Knowledge)	87

Table 11:	Means of Pretest and Posttest Raw Scores by Group (Strategy Knowledge)	88
Table 12:	Paired Sample t-Test Results of Group Pretest and Posttest Scores (Strategy Knowledge)	88
Table 13:	Means of Score Differences by Group (Strategy Knowledge)	89
Table 14:	Means of Pretest and Posttest Raw Scores by Group (Overall declarative Knowledge)	89
Table 15:	Paired Sample t-Test Results of Group Pretest and Posttest Scores (Overall declarative Knowledge)	89
Table 16:	Means of Score Differences by Group (Overall declarative Knowledge)	90
Table 17:	Means of Pretest and Posttest GPAI Scores by Group (Adjust)	91
Table 18:	Paired Sample t-Test Results of Group Pretest and Posttest Scores (Adjust)	91
Table 19:	Means of GPAI Score Differences by Group (Adjust)	92
Table 20:	Means of Pretest and Posttest GPAI Scores by Group (Decisions Made)	92
Table 21:	Paired Sample t-Test Results of Group Pretest and Posttest Scores (Decisions Made)	92

Table 22:	Means of GPAI Score Differences by Group (Decisions Made)	93
Table 23:	Means of Pretest and Posttest GPAI Scores by Group (Skill Contact)	93
Table 24:	Paired Sample t-Test Results of Group Pretest and Posttest Scores (Skill Contact)	94
Table 25:	Means of GPAI Score Differences by Group (Skill Contact)	94
Table 26:	Means of Pretest and Posttest GPAI Scores by Group (Skill Execution/Outcome)	95
Table 27:	Paired Sample t-Test Results of Group Pretest and Posttest Scores (Skill Execution/Outcome)	95
Table 28:	Means of GPAI Score Differences by Group (Skill Execution/Outcome)	96
Table 29:	Analysis of Attacking Movement from Appropriate Adjust Movements	104
Table 30:	GPAI Scores of Students Classed as High and Low Ability	151
Table 31:	Individual Player Knowledge Test Scores for All Categories	154
Table 32:	Individual Player GPAI Scores (All Components)	156

viii