

Table of Contents

Chapter		Page
I.	Introduction	1
	Background	1
	Evolution of the Study	2
	Purpose of the Study	8
	Treatments to be Utilized in the Study	9
	Definitions	10
	Spatial visualization	10
	General reasoning	13
	Advance organizer	13
	Non-organizer	14
	Summary	15
II.	Review of the Relevant Literature	16
	Literature Relating Spatial Aptitude Variables and General Reasoning to Mathematics	16
	Studies Indicating Relationships Between Instructional Treatments and Differential Aptitudes	18
	Studies Relating Advance Organizers to the Learning and Retention of Written Material	26
	Identifying Differential Variables	30
	Melton's Model	31
	Implication of the Research and Theory	32
	Summary	34
III.	Design and Procedures	36
	Analysis of Instructional Treatments and Criterion Variable Using Melton's (1967) Model	36
	Hypotheses	39
	Relevant Variables of the Study	42
	Experimental groups	42
	Dependent variable	43
	Aptitude Tests Selected	43
	The Instructional Booklets	44
	Development of the Transfer Test	46
	Reliability of the Transfer Test	47
	Statistical Models	48
	Administration of the Study	51
	Summary	53
IV.	Data Analysis	54
	Relevant Descriptive Statistics	54

Comparison of the Mean Transfer Test Scores for the Advance Organizer Versus the Non-Organizer Groups	55
Comparison of Mean Transfer Test Scores for the Analytic and Graphical Groups	57
Reliability Coefficients	58
Internal consistency reliability	58
Parallel forms reliability	58
Correlation Coefficients Within Groups	59
Further Hypothesis Testing	60
Analysis of Each Transfer Test Item Separately	67
Comparison of Transfer Test Items with Items Used in Webb's (1971) Study	70
Summary	71
V. Summary, Discussion, Conclusions, and Implications	73
Summary	73
Discussion	74
Conclusions	80
Limitations of the Study	82
Recommendations for Future Research	84
Implications for Education	86
Concluding Statement	87
Appendix A: Introductory Passages for the Learning Material	89
Appendix B: Instructional Booklets	94
Appendix C: Transfer Test	149
Appendix D: Instructions to Teachers	156
Appendix E: Twelve Transfer Test Items Used in the Webb (1971) Study and This Study	162
Bibliography	166