

**EFFECTIVENESS OF 5ES INSTRUCTIONAL MODEL FOR TEACHING
SCIENTIFIC CONCEPTS TO THE STUDENTS WITH VISUAL IMPAIRMENT**



**Faiza Jaleel
M.Phil (SEDU)
ID#15005189020**

**DEPARTMENT OF EDUCATION
SCHOOL OF SOCIAL SCIENCES AND HUMANITIES
UNIVERSITY OF MANAGEMENT AND TECHNOLOGY, LAHORE
2017**

**Effectiveness of 5Es Instructional Model for Teaching Scientific Concepts to the
Students with Visual Impairment**



Faiza Jaleel

ID # 15005189020

A Thesis Submitted in the Partial Fulfillment of the Requirements for the Degree of

Masters of Philosophy in Special Education

Department of Education

School of Social Sciences and Humanities

University of Management and Technology, Lahore, Pakistan

July, 2018

AUTHOR'S DECLARATION

I certify that this M.Phil Dissertation titled “Effectiveness of 5Es Instructional Model for Teaching Scientific Concepts to the Students with Visual Impairment” is an original research. All the material of different authors that is used in this thesis has been properly cited and no material is included that has been submitted for any other degree and award.

July, 2018

FAIZA JALEEL

M.Phil (SEDU)

ID # 15005189020,

Department of Education,
School of Social Sciences and Humanities,
University of Management and Technology, Lahore

FORWARDING SHEET

This is to certify that the research work described in this M.Phil dissertation is the original work of the author and has been carried out under my direct supervision. I have personally checked and supervise all the data, results, contents and materials reported in this dissertation and certify its authenticity. I further certify that the material included in this thesis have not been submitted for any other degree and award. This thesis was prepared under my supervision according to the prescribed format, therefore, I endorse its evaluation for the award of M.Phil Degree through the prescribed procedures of the University.

Supervisor,

Dr. Faisal Anis

Dedication

I dedicate my research work to my parents and teachers.
Their encouragement, motivation and support make me able
to achieve this milestone successfully.

Acknowledgement

All praises for ALLAH, the most Merciful and the most Beneficent who blessed me with sufficient opportunities to complete the study. I would like to express my deepest gratitude to my supervisor Dr. Faisal Anis, Assistant Professor Department of Social Sciences and Humanities, University of Management and Technology, for his guidance and positive attitude. His generosity, time, wise counsel, expertise and valuable suggestions encouraged me to move forward for the study. Without his proper guidance and help it would not be possible to complete this research.

I would like to thanks to all Government institutes for granted me permission of conducting pilot study. A special thanks to my mother and other family members who encouraged me at every step till the completion of this research. I would also like to thank to staff, administration and class teachers of 5th class of Aziz Jehan Begum Trust Institute for the Blind for their support and cooperation during this study.

F.J

Abstract

Science knowledge is important for students with visual impairment in the same manner as for students without visual impairment. The purpose of this study was to examine the effectiveness of 5Es instructional model for teaching scientific concepts to the students with visual impairment. It was an experimental study. Quasi pretest-posttest non-equivalent groups design was used for conducting this study. The population of this study comprised of students with visual impairment of class 5th from Lahore. The purposive sampling technique was used to select sample. Sample of 12 students with visual impairment was selected from one institute of Lahore district that is Aziz Jehan Begum Trust Institute for the Blind for experiment. A test was developed which was used as instrument for experimental study. Test was developed from one chapter “changes in matter” of science text book of 5th class. Test was validated by field experts and reliability was checked by pilot testing. Pilot testing was conducted on 31 students with visual impairment. Reliability of developed test on this sample was calculated and coefficient Alpha was found .83. This test was used as pretest and posttest during the experimental study. Control and experimental groups were used in experimental study. Intervention was given to experimental group in the form of 5Es instructional model. A significant difference was found between control group and experimental group on the basis posttest scores. Experimental group showed improved results on posttest as compared to control group. It was concluded that 5Es instructional model is effective for teaching scientific concepts to the students with visual impairment as compared to traditional lecture method of teaching.

Key words: Scientific Concepts, 5Es Instructional model and Students with Visual Impairment.

List of Content

Author’s Declaration	i
Forwarding Sheet	ii
Dedication	iii
Acknowledgement	iv
Abstract	v
List of Contents	vi
List of Tables	x

	Data Analysis Technique and Interpretation	11
Chapter 2	Review of the Literature	12
	Science	12
	History of science	13
	Importance of science	15
	Teachers' beliefs about science	15
	Teaching science a multimodal process	15
	Constructivism	18
	Constructive model of science instruction	21
	Constructive learning	22
	Implications for Thinking and Practice of Constructivism	23
	in Special Education	
	Vygotsky's Perspective	25
	5Es Instructional Model	26
	Phases of 5Es instructional model	26
	Curriculum Consideration for Children with Special	28
	Needs	
	Methodology Consideration for Children with Special	28
	Needs	
	Educational Provisions for Children with Visual	29
	Impairment	
	The BSCS 5E Instructional Model and Development of	29
	21st Century Skills	

	Teaching science to the students with visual impairment	33
	Role of Special Education Teacher	35
	Hands-on inquiry and scientific reasoning	37
	Students with visual impairment and science	40
	Direct instruction and discovery learning	42
Chapter 3	Research Procedure and Methodology	44
	Type of research	44
	Research Design and Nature of Research	44
	Instrument	45
	Table of specification	45
	Item format	46
	Content validity of test	47
	Pilot testing	48
	Item analysis of pilot test	50
	Final test	54
	Population	55
	Sample	55
	Experimentation	56
	Data collection	61
	Data analysis	61
Chapter 4	Analysis and Interpretation of Data	62
	Frequency distribution of demographic variables of control and experimental group	62

	Comparison of control and experimental group on the basis of demographic variables	64
	Comparison of control and experimental group on pretest and posttest scores	65
	Comparison of control group and experimental group in pretest and posttest scores on basis first four levels of cognitive domain.	66
Chapter 5	Summary, Findings, Conclusions and Recommendations	68
	Summary	68
	Findings of the Study	70
	Conclusion	71
	Discussion	72
	Recommendations	74
References and Bibliography		75
Appendices	Appendix A	86
	Appendix B	88
	Appendix C	90
	Appendix D	97
	Appendix E	99

List of Tables

Topics	Page
Frequency distribution of gender among control group and experimental group.	62
Frequency distribution of age among control group and experimental group.	63
Comparison of control and experimental group on the basis of gender.	64
Comparison of control and experimental group on the basis of age.	64
Comparison of control group and experimental group on the basis of pretest scores.	65
Comparison of control group and experimental group on the basis of posttest scores.	65
Comparison of control group and experimental group in pretest and posttest scores on basis first four levels of cognitive domain.	66

CHAPTER I

Introduction

There are two thoughts that support the grounding of teachers, the first one is that teaching was best profession for those who have remarkable academic background and that's the reason that they did not need any type of proper practice of teaching, the second one is teaching was best performed by such people who adopt the profession of teaching, specifically primary teaching, through training that help the person to be a professional teacher on work (Smith, Ewing, & Cornu, 2003). To develop skills of dynamic teaching, you will require adopting the knowledge about philosophy of education, you will require the practical application of your academic knowledge, and you will require to develop executive and deep intellectual skills in yourself. In this view it is essential for professional teacher to be aware about the knowledge, practical applications and philosophical thoughts. Teaching is a profession and it needs a teacher to practically implement all the principles of teaching in class room. It is reflected from above discussion that you have to make yourself updated and being a teacher you have to be a good decision maker for students (Lang, McBeath, & Hebert, 1995).