

**A STUDY OF LEARNING PROGRESSION IN SCIENCE OF
CLASS IX STUDENTS OF KENDRAPARA DISTRICT,
ODISHA**



A dissertation

submitted to

for partial fulfilment of the requirement

for the award of the degree of

Three Year Integrated B.Ed.-M.Ed. To Barkatullah University

Session:-2018-21

Research Supervisor-

Prof. N.C Ojha

Department of Education

RIE, Bhopal

Research Scholar-

Sudhamayee Mahali

Int. B.Ed.-M.Ed. (RIE, Bhopal)

Regional Institute of Education, Bhopal, (M.P)

National Council of Educational Research and Training (NCERT), New Delhi



**DEPARTMENT OF EDUCATION
REGIONAL INSTITUTE OF EDUCATION BHOPAL
CERTIFICATE**

This is to certify that the dissertation entitled “Learning progression in science of class IX students of Kendrapara District” is a bonafied work done by Miss Sudhamayee Mahali, enrolment no R190664070039 in the partial fulfilment for the award of the **Degree of Three-Year Integrated B.Ed.-M.Ed.** from the department of education of Regional Institute of Education, Bhopal. The project work done and the report satisfy the requirements for the award of the degree mentioned.

Place: Bhopal
Date: 20/07/2021


Dr. N C Ojha
Department of Education
RIE, Bhopal

DECLARATION

I here to declare that the work presented in this project is original and has been done by me under the joint supervision of Dr. N C Ojha, Regional Institute of Education, Bhopal, (MP). I further declare that this work has not been submitted elsewhere for the award of any other degree.

Place: RIE, Bhopal
Date: 20/07/2021

Sudhamayee Mahali
Three-year
Integrated B.Ed.-M. Ed.
RIE, Bhopal
Session: 2018-21

ACKNOWLEDGEMENT

First of all, I am grateful to the almighty who enabled me to complete this project

The success and final shape of this project required a lot of effort, guidance and support from many people. I feel privileged to have got all along the completion of my project.

I am highly indebted to my project guide Dr. N C Ojha for his non-continuous support, supervision, motivation and guidance throughout the tenure of my project in spite of his hectic schedule which truly remained driving spirit in my project. I am also thankful to his ungrudging golden opportunity to do this wonderful project on “Learning Progression in Science of Class IX students of Kendrapara District”.

I would like to thank Niranjana Behera, Principal of ST. XAVIER’S HIGH SCHOOL for giving me an opportunity for doing my Research.

I would like to thank Prof. Nityananda Pradhan, former principal, RIE, Bhopal and Dr. V.K Kakaria, Principal In-Charge, RIE, Bhopal and I also show a deep sense of gratitude towards Prof. Ratnamala Arya, HOD, Department of Education, RIE, Bhopal and all my teachers Dr. I.B Chughtai, Dr. B. Ramesh Babu, Dr. Sanjay Kumar Pandagale, Dr. Sourav Mishra and all the staff members for their dedication and support.

I would like to thank Dr. P. K Tripathy, Librarian, RIE, Bhopal, and all the staff members of library for their cooperation and support.

I am forever obliged to my parents and my beloved friends for their blessing, love, care, encouragement and support for my work.

Special thanks to my friend Kaibalya Vilash and Janmesh Vartak for their cooperation during project.

Place: RIE, Bhopal

Date: 20/07/2021

SUDHAMAYEE MAHALI

Enrolment no: R190664070039

CONTENTS

CHAPTER- 1: INTRODUCTION.....1-28

1.0.0 Introduction

1.1.0 Learning Progression

1.1.1 Importance of learning progression

1.2.0 Learning analytics

1.2.1 Implication of learning analytics

1.3.0 What is Science?

1.3.1 Importance of learning science

1.3.2 Importance of science in school curriculum

1.4.0 Science curriculum at secondary level

1.4.1 Need of science in day-to-day life

1.5.0 Innovative teaching in science for improving the learning progression

1.6.0 Constructivist approach

1.6.1 Principles of constructivism

1.6.2 Types of constructivism

1.6.3 Constructivist approach activities for learning science

1.7.0 Statement of the problem

1.8.0 Rationale of the study

1.9.0 Purpose of the study

1.10.0 Objectives of the study

1.11.0 Hypothesis

1.12.0 Operational Definition

1.13.0 The delimitation of the study

1.14.0 Summery

CHAPTER-2 LITERATURE REVIEW.....29-40

2.0.0 Introduction

2.1.0 Significance of literature Review

2.2.0 Review of literature

CHAPTER-3 METHODOLOGY.....41-50

3.0.0 Introduction

3.1.0 Origin of the Study

3.2.0 Selection of Research Method

3.3.0 Target Population

3.4.0 Sample Size

3.5.0 Sampling Techniques

3.6.0 Tools development for the Study

3.6.1 Achievement Test in science

3.6.2 Attitude towards science scale- Prof. Abinash Grewal (1978)

3.7.0 Procedure of Data collection

3.8.0 Statistical Techniques

3.9.0 Summary

CHAPTER-4 ANALYSIS OF DATA AND INTERPRETATION OF RESULTS AND FINDINGS.....51-59

4.0.0 Introduction

4.1.0 Learning progression in science of class IX students

4.2.0 Attitude towards science of class IX students

4.3.0 Effect of treatment, gender, and their interaction on achievement in science of class IX students

4.3.1 Effect of treatment on achievement in science of class IX students

4.3.2 Effect of gender on achievement in science of class IX students

4.3.3 Interaction of treatment and gender on achievement in science of class IX students

**CHAPTER- 5 FINDINGS, DISCUSSIONS, SUMMARY, IMPLICATIONS,
SUGGESTIONS AND CONCLUSION.....60-75**

5.0.0 Introduction

5.1.0 Findings

5.2.0 Learning progression in science of class IX students

5.3.0 Attitude towards science of class students

5.4.0 Effect of treatment on achievement in science of class IX students

5.5.0 Effect of gender on achievement in science of class IX students

5.6.0 Interaction of treatment and gender on achievement in science of class IX students

5.7.0 To sum up

5.8.0 Implications

5.9.0 Suggestions for further study

5.10.0 Conclusion

REFERENCES

FIGURE CAPTION**PAGE NO.**

Fig. 1: Importance of learning science

13

Fig. 2: Traditional teaching Vs. Constructivist teaching

19

Fig. 3: Population and Sample of the study

45

TABLE CAPTION

	PAGE NO.
Table no. 1: Description of course structure of class IX science	17-18
Table no. 2: Group-wise and gender-wise distribution of sample	44
Table no. 3: Sample school of the study	45
Table no. 4: Description of the Achievement Test in science	47
Table no. 5: Scoring scheme of the science attitude scale	48
Table no. 6: Mean, SD, Range, N and Percentile for Achievement in science of class IX students of Experimental and Control group	51-52
Table no. 7: Mean, SD, Range, N and Percentile for Attitude towards science of class IX students of Experimental and Control group	54
Table no. 8: SUMMARY OF 2 X 2 FACTORIAL DESIGN ANCOVA FOR ACHIEVEMENT IN SCIENCE OF CLASS IX STUDENTS BY TAKING PRE-TEST SCORES OF ACHIEVEMENTS IN SCIENCE OF AS COVARIATE.	56
TABLE NO. 9: MEAN AND SD FOR ACHIEVEMENT IN SCIENCE OF EXPERIMENTAL AND CONTROL GROUP	56-57

LIST OF GRAPHS

PAGE NO.

Fig. 4.1: Achievement in Science of Class IX Students of Experimental and Control Group	53
Fig. 4.2: Attitude towards Science of Class IX Students of Experimental and Control Group	55
Fig. 4.3: Interaction of Treatment and Gender on Achievement in Science	59

ABBREVIATIONS

1. No: - Number
2. Leaps: - Learning Progression
3. NRC: -National Register of Citizen