EFFECTIVENESS OF ANCHORED INSTRUCTIONAL APPROACH ON EMOTIONAL REGULATION AND PROCESS SKILLS IN SOCIAL SCIENCE AMONG SECONDARY SCHOOL STUDENTS OF KERALA

Thesis
Submitted for the degree of

DOCTOR OF PHILOSOPHY IN EDUCATION

By

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Certificate

I, **Prof. (Dr.) P.K. ARUNA** do hereby certify that this thesis entitled **"EFFECTIVENESS OF ANCHORED INSTRUCTIONAL APPROACH ON EMOTIONAL REGULATION AND PROCESS SKILLS IN SOCIAL SCIENCE AMONG SECONDARY SCHOOL STUDENTS OF KERALA"** is a record of bonafide study and research carried out by **MUHAMMED HARIS. C**, under my supervision and guidance.

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Aruna PK

Place: Calicut University
Date: 10.03.2021

Dr. P.K. ARUNA
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DECLARATION

I, **MUHAMMED HARIS. C,** do here by declare that this thesis entitled as "**EFFECTIVENESS OF ANCHORED INSTRUCTIONAL APPROACH ON EMOTIONAL REGULATION AND PROCESS SKILLS IN SOCIAL SCIENCE AMONG SECONDARY SCHOOL STUDENTS OF KERALA**" has not been submitted by me for the award of any Degree, Diploma, Title or Recognition before.

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I, **Prof. (Dr.) P.K. ARUNA** do hereby certify that this thesis entitled **"EFFECTIVENESS OF ANCHORED INSTRUCTIONAL APPROACH ON EMOTIONAL REGULATION AND PROCESS SKILLS IN SOCIAL SCIENCE AMONG SECONDARY SCHOOL STUDENTS OF KERALA"** is a record of bonafide study and research carried out by **MUHAMMED HARIS. C**, under my supervision and guidance.

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Acknowledgement

First and for most I bow myself before God Almighty for showering His immense love, Infinite grace abundant blessing and strength for the successful completion of my study.

I wish to express my deep sense of gratitude and sincere thanks from within my heart to Supervising teacher Rtd. **Prof. (Dr.) P.K Aruna**, *Department of Education, University of Calicut, for her expert guidance, valuable suggestions, constant encouragement and selfless help at each and every stage of this study. Her unending passion, aeon support, effervescent out look enabled to put a hem on my study.*

I express my sincere thanks to **Prof (Dr.) K.P. Meera**, *Head of the Department, Department of education, University of Calicut, for generous help throughout the period of study.*

I am grateful to Prof: (Dr.) C. Naseema, Prof: (Dr.) K. Abdul Gafoor, Prof. (Dr.) C.M. Bindu, Dr. Baiju K. Nath, Dr.Vasumathi. T and Dr. A. Hameed, the faculty members of Department of Education, University of Calicut, for their whole hearted support to accomplish the work.

The investigator is also thankful to Rtd. Prof. (Dr.) T.C Ayshabi and Rtd. Prof. (Dr.) P. Usha, Department of Education, Calicut University and Prof. (Dr.) Mohammedunni Alias Musthafa, Department of Education, Central University of Kasaragode, for their insightful comments and suggestions when needed the most.

The investigator express his sincere thanks to Mrs. Nessy Mol. S, Assistant Professor, University Centre, Calicut University, Kavarathi.

The investigator thanks the students from Government Higher Secondary School , Kunnakkavu. It has been a pleasure to work with them. Special thanks to the principals, teachers for giving permission to conduct my experimental study in their school.

The investigator is thankful to the Librarians, of Department of Education, C.H.M.K University of Calicut and Non teaching staffs and co scholars of education department, University of Calicut

I expressed my sincere thanks to my Director and colleagues of Aligarh Muslim University Centre, Malappuram for their sincere support and encouragement.

This work has greatly benefited from suggestions and kind encouragement by various individuals. I extend my gratitude to all individual who supported in my study.

The investigator would like to thank his parents, kids, family members, all teachers and friends for their support through out the study.

MUHAMMED HARIS .C

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LIST OF ABBREVIATIONS

ER	:	Emotional Regulation
NVIT	:	Non Verbal Intelligence Test
CEI	:	Classroom Environment Inventory
SES	:	Socio-Economic Status

CHAPTER I

INTRODUCTION

- Need and Significance of the Study
- Statement of the Problem
- Definition of Key Terms
- Objectives of the Study
- Hypotheses of the Study
- Methodology
- Scope and Limitation of the Study
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INTRODUCTION

Education is a process for the development of society. It involves teaching and learning. Teaching is an art, as an artist teacher's creativity and innovative approaches made changes in the field of education. Teaching learning process is influenced by the rapid social change and advancement in the field of science and technology. Teachers as a social engineer are finding new blue print for new social construction. Building blocks of knowledge, values, attitudes and skills are paved in productive fashion. for effective and long lasting construction of civilizations A social science teacher has a significant role in making the child to become a contributing citizen who can regulate his emotion and has the capacity to deal effectively with his environment by his skills in handling life situations. Social science teachers experiment various instructional approaches for preparing the child to see the social world through the lens of the science.

Instructional approach evolves through dialectical idealism from best ideas of past and it also results of critical evaluation of current developments and projected future trends. Nowadays education system promoting child centred constructivist teaching learning approach that gives emphasis on both process and product. Education policy makers and administrators also promoting this instructional approach in many means. For enhancing learning they emphasise multimedia technology, because senses are the gate ways of knowledge so multisensory means are more effective in teaching learning process.

Individuals have the skills of processing the information of their real lives for the development of individual and society. In order to achieve various life oriented skills, students have to learn knowledge as a tool for further exploration rather than inert knowledge. The phenomenon of inert knowledge was populored by Whitehead. According to him “Inert knowledge is knowledge that can usually be recalled when people are explicitly asked to do so but is not used spontaneously in problem solving even though it is relevant”. Existing method of teaching often fails in applying new knowledge in real life situation. Anchored Instructional approach based on social constructivism emerged to overcome inert knowledge problem. It is a technology based approach designed specifically to help students acquire the skill and knowledge necessary to become independent thinkers and learners (CTGV, 1990).

Anchored Instructional Approach is a category within constructivist learning environment and closely related to situated learning theory. Typically a high interest story has imbedded anchors with information needed to solve a complex, multifaceted problem depicted in the story. Subject matter is communicated through anchored resources within a realistic story rather than lecture or textbook reading. The Group of Vanderbilt Cognition and Technology (CTGV) first developed Anchored Instruction in 1990 under the leadership of John Bransford, although many people have been contributed to the theory and research of Anchored Instruction. According to Bransford (1992) and his colleagues at the Cognition and Technology Group at Vanderbilt (CTGV), “Anchored Instruction provides an authentic setting in which students can think as expert problem solvers. Concepts and principles

related to a topic are used to generate solutions rather than being stored as inert knowledge". Anchored Instruction was originally designed as a means to guide students in making the best use of available information. Students learn to see the relevance of information as needed for solving a particular problem (Bransford, Kinzer, Risko, Rowe & Vye , 1989). It prescribes that all learning activities should be organized around a story, problem or case that is called Anchor. Bransford and the CTGV 1990) reported the use of video based lessons using an authentic story that would be motivational for students rather than simply presenting a documentary film, CTGV videos were used to provide information within a rich storyline that would motivate students to solve problems. The motivation factor is important and facilitates the problem- solving process (Ormrod, 1999). Other studies in motivational problem solving defined the anchored lesson as one supporting a complex problem that students will consider "worth solving and that validates the learning of a set of relevant skills and concepts" (Barab & Landa, 1997). Research study carried out by Ormrod, 1999 suggested that highly motivated students are more likely to exhibit intrinsic motivation when a topic is of personal interest. When an activity is meaningful, a student is more likely to set his or her own learning goals, process information more efficiently, and engage in the activity". Students transfer knowledge best when the original learning occurs within contextualized learning experiences thus the importance of authenticity for both the storyline and the embedded data. Anchors with the imbedded data support several steps within the problem solving process and likely lead to reflection and meta cognitive thinking (Baker & Wedman, 2000). Based on earlier work of Bransford and the CTGV,

Love (2005) designed video-based lesson that support instructional methods for preservice teachers. Love's anchored lessons were designed to overcome the problem with "inert knowledge by providing cognitive apprenticeships for pre-service teachers. According to Love "A vital feature of Anchored Instruction is the use of a macro context or 'complex problem space'. The importance of using of realistic macro context is paramount to the success of the problem solving. Like cognitive apprenticeship, the use of realistic, interesting macrocontext permits students and teachers to experience many of the problems, situation, tools and environments from real-world situations. Love identified seven important design elements within multi model anchored instruction or combination of multimodel format of audio, video, hypermedia, images so on. These are Selection of appropriate anchors ; shared expertise and discussion on the problem statement; expanded anchors to provide diverse perspective; transfer concepts from the anchors to different context; problem with anchors tied to instructional goals; additional anchors using a variety of formats; and opportunities to explore the anchors.

Lexical meaning of the word 'anchor' is to moor or anchor something with an anchor. Within the framework of anchor learning, it means a comprehensive knowledge base or environmental adjustment that provides students with a rich source of information. Another definition of 'anchor' within the framework of anchor teaching is a comprehensive case of story or problem that also includes introductory and explanatory preliminary information that students will need and that presents a rich source of information (Ozerbas, 2015).

Need and Significance of the Study

Paradigm shift from behaviourism to constructivism is a result of the agreement that instruction must help students learn to think for themselves and to solve problems. It emphasises on thinking has prompted educators to draw their attention their attention on processes involved in thinking rather than only on the contents of taught Although without appropriate knowledge, people's ability to think and solve problems is relatively weak. An important challenge for educators is to teach relevant content in a way at facilitates thinking. Anchored Instruction helps the educators to transact relevant content with enhance thinking. because students explore knowledge from the macro context and use knowledge as a tool for seeking further information and problem solving.

In the high school classes social science teaching also confronted problem related to constructivist approach. By shifting the class room social system from teacher to students, students are suppose to construct knowledge in their social setting although some problems faced the students due to the lack of knowledge base. In this context anchored instruction as a method of child centred constructive, problem solving method by using multimedia became relevant. It provides knowledge not an information but as a tool for further exploration.

Similarly, monotony in teaching due to the lack of divergent strategies. Students are copying the materials directly instead of thinking. Because teachers gives context for knowledge construction in constructivist approach within box thinking. So students are assign to list answers or make a

short note from the text book or given materials. Students are collectively learning but it is not the construction of knowledge in a social setting. Because in the constructivist perspective, learners actively construct their own knowledge by connecting new ideas to existing ideas on the basis of materials or activities presented to them with the guidance and support gained from members of the society.

Educators and policy makers on education argued the importance of multimedia technology in teaching. There is a gap of approach for incorporating technology in teaching. Anchored Instruction also support to solve these problems.

New approaches to instruction are necessary because effective problem solving requires a great deal of specific knowledge, yet traditional form of instruction tend to produce knowledge that remains inert. Anchored Instruction tends to overcome the inert knowledge problem by allowing students, to experience changes in their perception and understanding as they are introduced to new bodies of information. (Bransford, et al., 1990)

It also provides the students with the opportunity to apply the information they have gained on different real life cases and thus serves as a bridge between school life and real life. The materials within the border of programmes basing on anchor learning are generally technology-based and they contribute to students success in a positive manner.

In anchored instruction content present mostly through multimedia. Multimedia can improve students' learning effects (Mayer & Anderson,

1991; Muthukumar, 2005). The multimedia learning is learning from verbal and visual information (Mayer & Moreno, 2003). The verbal information included the written form of printed words and the oral form of spoken language and any represented by pictorial forms such as illustration, diagram, photo, animation, and film are categorized in the visual information. According to the dual coding theory, brain encodes visual and verbal information simultaneously but differently, in separate areas (Lane & Wright, 2009). The brain clearly handles visual content differently than it does in textual information, text a, coding system, has meaning only in symbolic sense and viewers must expand a great deal of cognitive resources decoding words and phrases on slides. Under this kind of solution, they have little capacity left to pay attention to the speaker or they pay attention to the speaker and ignore text-heavy slides altogether. In contrast, visual processing can occur simultaneously and efficiently along with verbal processing because different brain regions are involved. Including meaningful (content, pictures, video clips and other forms of rich media on slides provides the best learning environment for learners. Besides, images are able to explain, simplify or expand concept in ways that are very difficult to do with text or even with spoken words . Using picture based visual communication is able to improve learners' learning and recalling (Levie & Lentz, 1982). Therefore pictures and graphics, especially, are powerful communication tools if used correctly.

It is suggested visual formats and videodisc as effective anchors due to the following reasons: Visual formats helps students to develop pattern

recognition skills. Videos allows a more clear presentation of events than text; it makes active, boosting senses, students can achieve more understanding about the problem solving situations. Anchored instruction provides everyone involved with a common background about the subject. Because it is visual, it is easier for students who are not good readers to participate in class discussions. Teachers often find this approach more manageable than finding all the resources necessary to accomplish a community-based project. Students often focus on an issue from a macro context that was not noticed as a potential issue by other members of the class. Once this issue is noticed, further research can be done on it.

Advances in computer technology and multi-media systems have led to widespread interest in computer-based instruction and learning environments. Cognitive studies on learning and transfer suggest that concepts acquired in a single context often remain coupled to that context, and are not readily transferred and accessed in other problem solving situations. It is the limitations of traditional, single context, computer-based instructional environments. Anchored Interactive Learning Environments overcome this problem (AILE).

Early research efforts were blocked by a number of factors: lack of powerful hardware, inadequate authoring software for developing computer-based representations of domain and pedagogical knowledge, and the inability of researchers to develop a unified framework for computer-based instruction and learning. Recent technological advances in computer hardware, software and multi-media systems, by themselves have been insufficient to realize the dreams of a computer-driven revolution in

educational practice. Significant benefits will start to occure when computer-based technologies are systematically incorporated into a system of tools that support thinking and learning activities.

Anchored Instruction helps to improve student's thinking capacity because "anchoring environments are designed to invite the kinds of thinking and reasoning necessary for students to develop that is the general skills and attitudes necessary for effective problem solving, and the specific concepts and principles that allow them to think effectively about particular domains. The focus has been on promoting thinking and reasoning problem solving situations. (Bransford, Goldman, & Vye, 1991: Nickerson, 1988; Resnick, 1987).

Anchors are present in the form of interesting stories, it is helpful to attract students attention and arousing interest. (Narration is an art which aims at presenting to the pupils various types of events, through the medium of speech. As listening a story students active mental participation in the situation will be more and they will reconstruct presented data and grasp easily and retain the information for a long duration. It will enhance imagination and creativity of listeners.

Multimedia, web media, or other interactive technology used to tell stories. The Cognition and Technology Group explained that the videos created, had been intended to recreate interesting, engaging, and realistic content that encouraged "active construction" of knowledge. This video discs provided learners with a way to explore a particular topic in a more interesting way, instead of merely reading about it or being relayed the information from the instructor.

Video-based anchors contain much richer sources of information than are available in the printed media. Gestures, effective visuals, music and so on always accompany the dialogue (Bransford & Stein, 1993). It will help to view the learning material from multiple points of view. A recent study conducted by Johnson (1987) provided a powerful illustration of the advantages of video versus purely verbal forms of information transmission. He worked with young 4 and 5 year old students from the inner city. Some of the students were instructed in a verbal format; others were instructed in the context of video stored on video discs. The video based instruction resulted in much greater retelling scores and comprehension scores than did the instruction that was conducted in verbal form. Teachers encourage student groups to extract key issues, facts, data in a cooperative learning situation. Cooperative learning situation make a feel of interdependence and it leads to develop a thinking all are connected to each other in the accomplishment of a common goal. It will leads to develop interpersonal and social skills such as encouraging, listening, giving help, clarifying, checking, understanding others so on. These skills enhance communication, trust, leadership, decision-making and conflict management.

Students encouraged to replay and re watch story to retrieve necessary data for solving problems.

Students develop solutions, present ideas to class and pros and cons of each idea discussed. In Anchored Instruction teacher presents a macro context for problem solving and find solution in cooperative learning situation. It is helpful to train children in the technique of discovery. It is more than learning

the formalized procedures for the solution and inert content knowledge. It involves intuitive thinking. It helps to master competencies for predictive reasoning, and for manipulating knowledge which would help in tackling new tasks. The learning context give exposure to develop new skills it will serve for solving most of the difficulties encountered in life. By assimilating what they have learned about the solving of intellectual problems in social science, children can solve their problems of life efficiently and effectively. It also support the pupils to make certain attitudes and skills which are necessary for adult life. As a realistic class room situation students became bold enough to face challenging life situation with courage, confidence and scientific outlook. It will enhance the critical thinking capacity of the students. Students engage in problems solving procedure such as collection and organization of important data, searching for necessary additional data, formulation of hypotheses and testing and reaching in conclusion will develop the students mental horizon and increase the ability of analytical and evaluative capacities. Students will be more active participants because students are solving the problems with their own effort. It will give an insight to the learners that there are many ways to looking into a single problem and they have keenly listen to different points of view. Hence they become tolerant and open minded. Similarly assimilate the knowledge meaningfully because of the active participation in the processing of information for solving problematic situations. Learners are engaging in problem solving procedure with support and guidance of teacher, it will leads to develop harmonious relationship\p between teacher and students.

Statement of the Problem

"EFFECTIVENESS OF ANCHORED INSTRUCTIONAL APPROACH ON EMOTIONAL REGULATION AND PROCESS SKILLS IN SOCIAL SCIENCE AMONG SECONDARY SCHOOL STUDENTS OF KERALA"

Definition of Key Terms

Effectiveness

It means measuring the degree to which learners accomplish objectives for each unit or total course (Mehra, 1988). In this study the term effectiveness refers to the effect of a particular treatment given for a learner, which produces cardinal transformation in student's behaviour in terms of their Emotional Regulation and process skills in social science.

Anchored Instructional Approach

Anchored Instruction is an instruction highlights the development of an anchor or theme around which various learning activities take place (Larty et al., 1990) defines Anchored Instruction is a rich shared environment that generates interest and enables students to identify and define problems while they explore the content from many different perspective.

In this study anchored instruction taken as the definition from cognition and technology group. That is Anchored Instructional Approach is a technology based approach designed specifically to help students acquire the

skill and knowledge necessary to become independent thinkers and learners (CTGV, 1990)

Emotional Regulation

Emotional regulation defined as "all the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions (Gross 1999, Thompson 1994) Emotional regulation is the ability to respond to the ongoing demands of experience with the range of emotion in a manner that is socially tolerable and sufficiently flexible to permit spontaneous reactions as well as the ability to delay spontaneous reactions as needed. The important components of Emotional Regulation selected for the study are Self Blame, Acceptance, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into perspective, Catastrophizing, Blaming Others.

Process Skills in Social Science

It stands for the intellectual skills required for completing a stage or stages of a focused scientific investigation (Michaelis, 1980). The term process skill in social science stands for the intellectual skills need for scientific investigation attained by the students as a result of learning social science (Michaelis, 1980).

The important components of Process skills selected for this study are Classify, Observe, Locate, Predict, Synthesize, Evaluate, Interpret and Measure.

Secondary School Students

Students who are studying in the secondary school classes namely standard VIII, IX,X called secondary schools students. In this study Pupil who studying in VIIIth standard only taken as sample.

Variables Selected for the Study

Independent Variable

- The independent variable of the study is two levels of instructional method, they are Anchored Instructional Approach and Existing Method of teaching

Dependent Variable

I. Emotional Regulation (Total)

Emotional Regulation (component wise) viz.,

1) Self Blame 2) Acceptance

3) Rumination 4) Positive Refocusing

5) Refocus on Planning 6) Positive Reappraisal

7) Putting into perspective 8) Catestrophizing

9) Others Blame

II. Process Skills in Social Science (Total)

Process Skills in Social Science (component wise)

1) Classify 2) Observe 3) Locate 4) Predict

5) Synthesize 6) Evaluate 7) Interpret 8) Measure

Objectives of the Study

1. To find out the existing level of emotional regulation of secondary school students in total sample and sub samples of gender and locale
2. To compare the mean pre test scores, post test scores and gain scores of Experimental group and control group of Emotional Regulation in total sample and component wise
3. To compare the mean pre test scores, post test scores and gain scores of experimental group and control group of Process Skills in Social Science in total sample and component wise
4. To compare the effectiveness of Anchored Instructional Approach with that of existing method of teaching on Emotional Regulation and process skills in social science

Hypotheses of the Study

1. There will be no significant difference in mean scores of existing level of Emotional Regulation of secondary school students in
   a) Total sample
   b) Sub sample
   i. Gender (boys and girls)
   ii. Locale (urban and rural)
2. There will be no significant difference in the pre-test mean scores of Emotional Regulation of the Experimental and Control groups for
   a) Total Sample

b) Component wise

i. Self Blame

ii. Acceptance

iii. Rumination

iv. Positive Refocusing

v. Refocus on Planning

vi. Positive Reappraisal

vii. Putting into perspective

viii. Catastrophazing

ix. Others Blame

3. There will be significant difference in the mean pre-test and post-test scores of Emotional Regulation of the Experimental group for

a) Total Sample

b) Component wise

i. Self Blame

ii. Acceptance

iii. Rumination

iv. Positive Refocusing

v. Refocus on Planning

vi. Positive Reappraisal

vii. Putting into perspective

viii. Catastrophazing

ix. Others Blame

4. There will be significant difference in the mean pre-test and post-test scores of Emotional Regulation of the Control groups for

   a) Total Sample

   b) Component wise

      i. Self Blame

      ii. Acceptance

      iii. Rumination

      iv. Positive Refocusing

      v. Refocus on Planning

      vi. Positive Reappraisal

      vii. Putting into perspective

      viii. Catastrophazing

      ix. Others Blame

5. There will be significant difference in the mean post-test scores of Emotional Regulation of the Experimental and Control groups for

   a) Total Sample

   b) Component wise

      i. Self Blame

      ii. Acceptance

      iii. Rumination

      iv. Positive Refocusing

      v. Refocus on Planning

      vi. Positive Reappraisal

      vii. Putting into perspective

      viii. Catastrophazing

      ix. Others Blame

6. There will be significant difference in the mean gain scores of Emotional Regulation of the Experimental and Control groups for
   a) Total Sample
   b) Component wise
      i. Self Blame
      ii. Acceptance
      iii. Rumination
      iv. Positive Refocusing
      v. Refocus on Planning
      vi. Positive Reappraisal
      vii. Putting into perspective
      viii. Catastrophazing
      ix. Others Blame
7. There will be no significant difference in the pre-test mean scores of Process Skills in Social Science of the Experimental and Control groups for
   a) Total Sample
   b) Component wise
      i. Classify
      ii. Observe
      iii. Locate
      iv. Predict
      v. Synthesis
      vi. Evaluate
      vii. Interpret
      viii. Measure

8. There will be significant difference in the mean pre-test and post-test scores of Process Skills in Social Science of the Experimental group for

   a) Total Sample

   b) Component wise

      i. Classify

      ii. Observe

      iii. Locate

      iv. Predict

      v. Synthesis

      vi. Evaluate

      vii. Interpret

      viii. Measure

9. There will be significant difference in the mean pre-test and post-test scores of Process Skills in Social Science of Control groups for

   a) Total Sample

   b) Component wise

      i. Classify

      ii. Observe

      iii. Locate

      iv. Predict

      v. Synthesis

      vi. Evaluate

      vii. Interpret

      viii. Measure

10. There will be significant difference in the mean post-test scores of Process Skills in Social Science of the Experimental and Control groups for

    a) Total Sample

    b) Component wise

        i. Classify
        ii. Observe
        iii. Locate
        iv. Predict
        v. Synthesis
        vi. Evaluate
        vii. Interpret
        viii. Measure

11. There will be significant difference in mean gain scores of Process Skills in Social Science of the Experimental and Control groups for

    a) Total Sample

    b) Component wise

        i. Classify
        ii. Observe
        iii. Locate
        iv. Predict
        v. Synthesis
        vi. Evaluate
        vii. Interpret
        viii. Measure

12. There will be significant difference in the adjusted mean scores of Emotional Regulation of Experimental and Control groups by considering pre-test Process Skills in Social Science, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status as Covariates for Total Sample
13. There will be significant difference in the adjusted mean scores of Process Skills in Social Science of Experimental and Control groups by considering pre-test Emotional Regulation, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status as Covariates for Total Sample.
14. Anchored Instructional Approach has significant effect over existing method of teaching on Emotional Regulation and Process Skills in Social Science.

Methodology

The methodology following in the study has been briefly discussed below

- Design of the study
- Sample selected for the study
- Tools used for the study
- Statistical techniques used for the study

Design of the Study

To realize the objectives of the study, investigator selected Quasi-Experimental Design in which the experiment involves the effectiveness of

Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science.

Research design selected.

The Pre test - Post test Non equivalent Groups Design was selected for the study (Best and Khan 2017)

O1 X O2

O3 C O4

O1 O3 Pre-test O2-O1

O2 O4 Post –tests O4-O3 Gain Score

X Exposure of a group to experimental (treatment) variable

C Exposure of a group to control condition/ treatment

O Observation or test administered

Sample Selected for the Study

Standard VIII students of secondary schools of Kerala State was considered as the population of the study**.** The investigator selected two intact class division of standard VIII from one school as sample, One for experimental group and the other for control group. The researcher selected 90 students from two classes of one school. The investigator randomly assign one class as experimental and other class as control group. The school selected was Government Higher Secondary School, Kunnakkavu in Malappuram District.

Tools used for the Study

- Lesson transcript for Anchored Instructional Approach (Aruna & Haris, 2018)
- Lesson transcript for existing method of teaching (Aruna & Haris, 2018)
- Emotional Regulation Scale (Aruna & Haris, 2018)
- Test of Process Skills in Social Science (Aruna, Shiji & Surabi, 2014)

Tools used for Equating the Group

1. Class Room Environment Inventory (Aruna, Sureshan & Unnikrishnan, 1988)
2. Raven's Progressive Matrices Test (Raven 1958)
3. Socio-Economic Status Scale (Aruna & Sumi 2010)

Statistical Techniques Used

Analysis of Data

For preliminary analysis Arithmetic Mean, Median, Mode, Standard Deviation Skewness and Kurtosis were used.

Test of Significance of Difference between means (t) was used to compare the relevant variables of the Experiment and Control groups

ANCOVA:

This technique permits to statistically removing the effects of other variables from the dependent variable.

Scope and Limitation of the Study

The main aim of present investigation is to explore how anchored instructional approach effects on emotional regulation and process skills in social science of secondary school students. Appropriate tools available as well as constructed by the investigator were used for the study. With the help of these tools, enough data were collected from a random sample of 90 students from Government Higher Secondary School, Kunnakkavu, Malappuram District of Kerala State to make the study more objective and accurate. The experimental study conducted in VIIIth standard class of one school. At most care was taken for analyse the data. Inference of the study may provide valuable information and suggestion for academicians and parents.

Even though possible precautions were taken to obtain reliable and generalized results. Some of the limitations likely to occur in the study are;

1. There may be many factors affecting process skills in social sciences, the present study was confirmed two variables

2. The selection of the dependent variable has been restricted to emotional regulation and process skills in social science

3. Population of the present study was limited to standard V111 students of the one secondary school.

4. Selection of few classes across the district intended for data collection may not be representative of all institutions in the state.

5. Anchored Instructional Approach may effect the other variables but the study only try to find out the effectiveness of this approach on emotional regulation and process skills in social science.

6. This study limited to social science subject and other subjected were not be attempted.

7. Anchored instructional approach can conduct without technology also but in this study technology based Anchored Instructions were provided.

Organization of the Report

Systematically organized research report help the users for further reference. Presented report is organized as follows:

Chapter 1

This chapter contains a brief introduction of the problem, need and significance of the study, statement of the problem, definition of key terms, variables, objectives of the study, hypotheses of the study, brief methodology, scope and limitation of the study

Chapter 2

Second chapter contains theoretical overview of important variables such as Anchored Instruction, Emotional Regulation and Process Skills in Social Science and review of the related studies.

Chapter 3

Methodology of the study was discussed in detail consisting of variables of the study, the description of the design, tools employed, sample

selected for the study, Data collection Procedure, scoring and consolidation of data and the statistical techniques used for the study

Chapter 4

Details of the statistical analysis of the data, its result and interpretation

Chapter 5

This chapter contains summary of the study, major findings, tenability of hypotheses, educational implications and suggestions for further research in the area concerned.

CHAPTER II

REVIEW OF RELATED LITERATURE

- *Theoretical Overview of Anchored Instruction*
- *Studies Related to Anchored Instruction*
- *Theoretical Overview of Emotional Regulation*
- *Studies Related to Emotional Regulation*
- *Theoretical Overview of process skills in Social Science*
- *Studies Related to process Skills in Social Science*

REVIEW OF RELATED LITERATURE

A review of related literature is helpful to understand current knowledge in the field of study. It will help to avoid the repetition of research. It also gives light to a theoretical base for the research and helps the investigator to determine the nature of research. It sharpens knowledge related to the research variable and gives clarity to the background of the research. It makes aware of the status of the problem.

The literature reviewed in this study is following

- Theoretical Overview of Anchored Instruction
- Studies Related to Anchored Instruction
- Theoretical Overview of Emotional Regulation
- Studies Related to Emotional Regulation
- Theoretical Overview of process skills in Social Science
- Studies Related to process Skills in Social Science

Theoretical Overview of Anchored Instruction

Anchored Instruction

Anchored Instruction is highlighting the development of an anchor or them around which various learning activities can take place and serve to provide multiple perspectives. Anchored Instruction is a major paradigm for technology-based learning that has been developed by the Cognition and Technology Group at Vanderbilt University under the leadership of John Bransford.

The Cognitive and Technology Group at Vanderbilt (CTGV) is an interdisciplinary team of researchers at the Learning Technology Centre, Peabody College for Education at Vanderbilt University. Members of CTGV have developed and tested a variety of technology-based programs that are consistent with constructivist theories (Bransford, Goldman & Vye, 1991). This group investigated and conceptualized Anchored Instruction.

McLarty. et al., (1990) defined anchored instruction as a "rich shared environment that generates interest and enables students to identify and define problems while they explore the content from many different perspectives". It emphasizes particularly video-based "macro contexts," which intend to overcome "inert knowledge" Whitehead,(1929) by anchoring learning within the context of meaningful problem-solving activities CTGC, (1992, 1993).

Traditional instructional environment challenged by Anchored Instruction by stating that they succeeded teaching the "right answer," but fail to teach how to transfer the right answers to the problem-solving situations Donovan, Bransford and Pellegrino, (1999). According to CTGV (1990, 1993), Traditional instruction is typically focused on delivering and mastering knowledge in a decontextualized way. By this students may ignore the worth of their learned knowledge and its application in problem-solving situations in real life. Whitehead (1929) named this type of knowledge as inert knowledge that is knowledge unable to transfer to even similar contexts.

Various theories and Instructional approaches were influenced by Anchored Instruction, such as constructivism, contextualism and situated cognition and cognitive apprenticeship

Constructivism

Constructivism is an approach based on student construct knowledge. It is more a child-centered approach. There are two types of constructivism first one is cognitive constructivism and the other is social constructivism. Anchored Instructional Approach is mainly developed based on social constructivism. According to social constructivism, learner constructs knowledge in the socio-cultural setting. So learning environments should support multiple perspectives or interpretations of reality, knowledge construction, context-rich, experience-based activities. Instead of knowledge reproduction, It focuses on knowledge construction from one's experience, mental structure, and beliefs that are used to interpret objects and events. Each individual's perspective about the outside world varies due to an individual's unique set of experiences. Students cannot simply construct knowledge passively from teacher's information through knowledge delivery. Students play a significant role in knowledge construction in the socio-cultural context Crotty, (1998). Students are no longer passive receivers of established knowledge in a classroom setting. They are actively participating in the teaching and learning process to cooperatively construct knowledge with teachers and peers (Glaser, Rieth, Kinzer, & Peter, 1999). Naturally, students direct their learning procedures (Duffy 1997; Vygotsky 1978).

Teachers give more emphasis to creating environments that enable the students to experience the happiness of learning instead of explicitly teaching them. The environment should be designed to support high levels of learner control, cognitive and behavioral engagement, higher-order thinking skills,

particularly meta-cognitive reasoning (Donovan, Bransford, & Pellegrino, 1999; Jonassen, & Henning ,1999). In a constructivist teacher also act as joint problem solvers when student face any obstacles to learning progress.

Contextualism and Situated Cognition

Macro contexts refer to complex learning situations that are to be explored by students and teachers from multiple perspectives (Brown, Collins, & Duguid, 1989). Duffy and Jonassen, 1992; Greeno, Collins, and Resnick (1996) argued that both individual and environment reciprocally determined in a learning activity. So learning can be explained in terms of the interrelationship between learners and their specific environment.

The macro context provides an opportunity for the students to respond with their acquired skills and how they will be used in problem-solving situations (Duffy & Jonassen 1992; Hasselbring 1994).

As anchored instruction more give importance to maintain the complexity of content as macro context. Situated cognition is a closely related area of research in terms of explaining students learning based on the interrelation between students and the specific environment CTGV 1990; Greeno, Collins, & Resnick 1996).

Lave (1988) argues that learning as it normally occurs is a 'function of the activity, context and culture in which it occurs. This contrasts with most classroom learning activities that involve knowledge, which is abstract and out of context. Social interaction is a critical component of situated learning- learners become involved in a "community of practice", which embodies

certain beliefs and behaviors to be acquired. As the beginners or newcomers move from the periphery of this community to its center, they become more active and engaged within the culture, and hence, assume the role of experts or old-timers. Furthermore, situated learning is usually 'unintentional' rather than deliberate. These ideas are call the process of "legitimate peripheral participation." (Lave & Wenger 1991)

Brown, Collins and Duguid (1989) reported that learning is always situated. Situated learning theory argues that Knowledge needs to be presented in an authentic context, that is settings and applications that would normally involve that knowledge and Learning requires social interaction and collaboration.

'Situated Learning' is a general theory of knowledge acquisition. It has been applied in the context of technology-based learning activities for schools that focus on problem-solving skills (Cognition & Technology Group at Vanderbilt, 1993).

Greeno, Collins and Resnick (1989) indicated that the best learning activities include concrete situations, instead of abstracted representations of information. Anchored Instruction emphasizes authenticity of tasks and activities that reflect macro contexts and situations. Authenticity is a transfer of learning issues Hasselbring (2001). Authentic learning is based on the set of beliefs that

a) learning is grounded in the concrete situation in which it occurs;
b) knowledge is not automatically transferred from a learning situation to real problem-solving situations. For the effective transfer of knowledge

the learning condition and real problem-solving condition should have shared elements;

c) instruction is grounded in using apprentice models to promote learning; and
d) learning needs to be implemented in the complex social environment. (Glaser Rieth, Kinzer, Colburn, & Peter (1990):

Cognitive Apprenticeship

To help students experience the kinds of problems that content experts in an area encounter, and to understand how core concepts in a discipline help clarify these problems is the major goal of the Anchored Instruction (CTGV, (1992). Students can observe how experts solve problems and engage in the same kinds of activities, such as problem-based, case-based, and project-based learning. Students use content knowledge and anchors as cues to solve the complex problem similar to that of experts. This experience helps students to transform knowledge learned in school into real problem-solving situations. In Anchored instruction teachers can take on the role of experts Duffy (1997). They react to the students a problematic situation by modeling and conveying ideas. Besides, they model how to identify problem situations and find the necessary resources, technical knowledge, and skills. Anchored instruction is challenging the traditional didactic view of education. in didactic instruction, students often find it difficult to apply their knowledge for solving complex problems in real situations (Bransford, Sherwood, Hasselbrig, Kinzer, C , & Williams, 1990) because the knowledge and meaning are acquired through abstract activities and stored in memory for

later retrieval (Glaser, Rieth, Kinzer & Peter (1999). Alternatively, anchored instruction has concentrated on creating a naturalistic and authentic learning environment that encourages students to participate fully in academic activities in a socially supported and scaffold environment rather than learning discrete skills in isolation. There are six major advantages to anchored instruction. They are;

a) the video provides a mental model or anchor for student's perceptions and comprehension,
b) it can provide a realistic context
c) it enriches understanding of what learners learned,
d) it can develop self-regulated learning strategies,
e) it can provide multiple perspectives from which problems may be viewed and
f) it assists students in applying knowledge to problems encountered in realistic environments.

The video anchor is the critical component of anchored instruction. It is expected to have a particularly strong impact on the student's motivation to learn National Research Council (2004); Paige, Hickok, & Patrick (2004).

Cognitive Flexibility theory

Anchored instruction is closely related to the Cognitive Flexibility Theory Spiro, Feltovich, Jacobson, and Coulson (1991). Cognitive flexibility theory' focuses on the nature of learning in complex and ill-structured domains. Spiro and Jheng (1990) state: "By cognitive flexibility, mean the

ability to spontaneously restructure one's knowledge, in many ways, in an adaptive response to radically changing situational demands. This is a function of both the way knowledge is represented and the processes that operate on those mental representations. Cognitive flexibility theory has some basic principles such as learning activities must provide multiple representations of content, Instructional materials should avoid over simplifying the content domain and support context-dependent knowledge. Instruction should be case-based and emphasis knowledge construction, not a transmission of information, Knowledge sources should be highly interconnected rather than compartmentalized. Cognitive flexibility theory is specially formulated to support the use of interactive technology it shares a strong resemblance to traditional constructivist approaches such as theme-based learning (Dewey, 1933).

Theme-based instruction has proven to be effective in integrating language skills and creating a learning environment that allows the learner to become comfortable with the process. Theme-based instruction encourages creativity and higher-order thinking such as reasoning and problem solving, which are important skills in language learning. It focuses on selecting and highlighting a theme through an instructional unit or module, course, multiple courses. It is often interdisciplinary, highlighting the relationship of knowledge across academic disciplines and everyday life.

The CTGV has developed a set of interactive videodisc programs called the "Jasper Woodbury Problem solving Series." These programs involve adventures in which mathematical concepts are used to solve

problems. However, the anchored instruction paradigm is based upon the general model of 'problem-solving' (Bransford & Stein, 1993).

Development of Multimedia Anchors

The initial focus of the work was on the development of 'interactive videodisc tools' that encouraged students and teachers to pose and solve complex and realistic problems. The video materials serve as "anchors" (macro contexts) for all subsequent learning and instruction. As explained by CTGV (1993) "the design of these anchors was quite different from the design of videos that were typically used in education. Its goal was to create interesting, realistic, contexts that encouraged the active construction of knowledge by learners. Anchors were stories rather than lectures, and were designed to be explored by students and teachers". The use of interactive videodisc technology makes it possible for students to easily explore the content.

Design Principles

The important principles for implementing Anchored Instruction are follows Generative Learning Format: After creating a meaningful context for problem-solving by macro context storyline a brainstorming question launch in front of the learner. Students become more motivated due to the participation and role for determining in the outcome of the story. When students are generating and solving the problem they become active learners. Research findings found benefits in students generate information (Soraci, et al., 1994)

Video-based presentation format.

To understand complex and interconnected problems video is better than text form because videos are more communicate even the students have

difficulty in reading. There are much more peculiarities and possibilities in lesson transcript through video than text such as the context depicted through videos are depicted in a rich, vivid and realistic manner and it also enables to provide background information it will motivate the learner

Narrative format

An information set, a slate of a character, an initiating event, and consequent events include in video narration. The students will have the impression of solving a real problem by a challenge at the end of the video. By giving a more vivid and graphic depiction of events creates for students a more authentic use of mathematical concepts (Brown, Collins & Duruid, 1989).

Problem Complexity

Instead of traditional classroom activities anchored instruction deliberately provide complex problem with many interrelated steps. It will help the students to develop the capacity to solve real-life problems. By presenting video presentation it will be more clear and interesting.

Embedded Data Design

The embedded data format is an important design feature of Anchored Instruction. All necessary problems for solving attached in the video story including more information. So the students need to identify the problem and relevant information and the source of presentation and extract this information from the story (Goldman, et al., 1991; Sherwood et al., 1991).

Opportunities for transfer

Anchored Instruction helps students to transfer their newly learned information to new context spontaneously through which inert learning problem will solve. The anchored videos are presented are analog problems that will helpful to transfer into real situations.

Link across the curriculum

Anchored Instructional video story contains not only the necessary data to solve the challenge but also information to provide many opportunities to introduce topics from other subject matters.

Above mentioned design principles influence each other and operate as a whole instead of independent characters. Anchored Interactive Learning Environment is enhancing sustained learning by active learners.

According to Pappas Christopher, Anchored Instruction Educational Model is based on three basic principles. They are

1. ***Anchor based Scenarios***

An anchor which means a problem-solving scenario is the center of all lessons. A mystery covered in one story that must be solved by the learner. A learner can use available knowledge to solve the Anchor based Scenarios

2. Discovery learning

Anchored Instructional videos allow the learner to explore from the context to discovering the solution.

3. Extensive use of multimedia

Anchored Instructional Approach highly uses multimedia programs. For active knowledge construction cognition and technology group are supporting for creating realistic context through Multimedia.

Baier. Ellefsen and Hall (1994) highlighted Six "key decision points" for anchoring instruction in an interesting and realistic problem-solving environment.

They are a) Choosing an appropriate anchor b) developing shared expertise around the anchor; c) expanding the anchor d) teaching with the anchor e) allowing student exploration and f) sharing what was learned from the anchor instruction.

Baumbach, Brewer, and Bird (1995) identified these decision points as steps or phases of anchored instruction. They are

Phase I: Choosing an appropriate anchor

An anchor introduces to a student. An anchor can maintain a student's interest and rich enough to support solving problems. The anchor might be a segment of a video, a trip, a major event, educational software so on

Phase II: Developing shared expertise around the anchor;

The teacher leads a discussion of the anchor for familiarizing and knowing more about the anchor and it will help to aware of student's responsibility in learning. Through this students develop shared expertise around the anchor.

Phase III: Expanding the anchor

Students expand the anchor by their investigation. Students attempted to find missing information and to find out the solution raised from the context.

Phase IV: Teaching with the Anchor

Students use knowledge as a tool for solving a problem. Simultaneously instructor gives some scaffolding according to the demand. Teacher makes the interconnection between the anchor and learning environment

Phase V: Allowing student exploration

Students work on the context related to anchor. Students are allowed to extend their knowledge and relate it to other areas. In this phase, students explore more and use reading greater depth about the subject, writing a report or an essay, or creating a multimedia report.

Phase VI: Sharing what was learned from the anchor instruction

In this phase, students share what they learned from the context. It will be made pride in their work and provide insight into different ways of problem-solving by their classmates.

In short Anchored instruction, a theory is based on the following Aspects. Learning and teaching activities should be designed around an "anchor, which should be some sort of case-study or problem situation. Curriculum material should allow exploration by the learner.

Studies Related to Anchored Instruction

Prattd (2019) conducted a study improving math problem-solving skill; Anchored instruction reported that anchored instruction is not intended to increase computational skill in students but rather to improve problem-solving skill in real-world situations

Pappas (2018) reported that anchored instruction can be used in a wide variety of subject matters, particularly those designed to encourage the development of reasoning skills. Its principles are still in use in instructional design, especially for case studies presented as branching scenarios and other types of eLearning activities that require learners' active participation.

Bottage and Tolend (2015) reported that the important advantage of delivering problems by video compared to text teachers and classroom observers reported that the video immerses students in the problem space almost immediately without the limitations imposed by text.

Tyng (2012) found that the interactive Power Point presentation incorporated hyperlinks and hierarchical design that provided the teacher with the flexibilities and efficiency in managing angered instruction presentations slides

Swanger (2012) reported in his research paper on anchored instruction that technology must be grounded in solid instructional design principles for its effectiveness. The novel idea of video can be quite engaging only if it used to promote learning and knowledge building and technology alone is never a means to an end. The anchor provides background knowledge about the problem and creates a shared learning experience for the students

Abbas (2008) conducted a research study with 77 pre-service teachers from the National Institute of Education in Singapore. The findings indicated that incorporating an anchored instructional approach, as one of the course assignments, enhanced the teachers' skills in technological applications in teaching and learning and also improved their content and pedagogical content knowledge in teaching elementary science.

Pellegrino and Brophy (2008) derived a general set of ideas about the characteristics of a powerful learning environment and instructional design principles that are coupled to them. In subsequent sections, it illustrates how features of the CTGV'S evolving work on anchored instruction helped lead to and embody those principles

Love (2005) prepared anchored lessons to overcome the problem with inert knowledge by providing cognitive apprenticeship for new teachers. He also mentioned a vital feature of anchored instruction is the use of a macro context or complex problem space. The importance of using realistic macro context is paramount to the success of the problem-solving.

Kurz (2005) conducted a study on using anchored instruction to evaluate mathematical growth and understanding reported that the pre-service teaches were optimistic about the utilization of anchored instruction because of the students supporting features in learning.

Kokik and Kurzterry (2005) Reported that the preservice teachers were optimistic about the utilization of anchored instruction and describe features that support student learning and growth.

Kariuki and Darun (2004) revealed that the teacher education community has argued that such didactic practice creates the why the problem of inert knowledge- the type of knowledge that people can recall when prompted, but cannot recall spontaneously during problem-solving. Anchored instruction approach addresses the shortcoming of an existing structure in educational computing courses by providing a venue that fosters a rich shared environment that generates interest and motivation and enables students to alleviate the problem of inert knowledge Anchored instruction enables an effective response to the need for restructuring educational computing courses to prepare technology proficient K-12 teaching course.

Kariuki and Duran (2004) conducted a study on the Anchored Instruction approach to restructure educational computing courses to enhance future teachers learning of technology applications in the classroom. The sample was 22 preservice teachers from Southeastern Ohio. The pre-service teachers were enrolled in both a curriculum development class and an educational computing class in the winter 2000 academic quarter. The instructors for both courses collaborated their teaching efforts whereby the preservice teachers used the educational computing class to research, record and document their experiences the curriculum development. The findings indicate the effectiveness of anchored instruction for preservice teachers to learn about and teach with advanced technology tools in their future practice. So the study recommends increased efforts to apply anchored Instruction approach in educational computing courses.

Kuvich (2003) explains with a story of the as per journey to explain the application of anchored instruction that Jasper buys a boat along with a small

temporary fuel tank and broken light while he encounters a problem to reach his home teacher challenged the students with embedded problem students working in groups to decide to send jasper to his home safely and securely by considering some aspects such as the speed of the boat, distance, time of sunset so on. Teacher showing videos containing relevant information after the work each group presents their solution.

Rieth et al., (2003) found that the use of anchored instruction as a promising intervention for high school students for high incidents disabilities.

Brush, Glazewski, Rutowski, Berg and Stromsors (2003) explored some initial effect of attempts to enhance the education of pre-service teaches in three areas How people learn, b. mathematics & c. adolescent psychology. All terms agreed on some basic guidelines. The report compared the similarities and differences in the experiences.

Bucalos and Browne (2003) investigated on "the effectiveness of video-based anchored instruction as a strategy for developing higher-order thinking and problem-solving skills of preserves teachers". Prospective teachers are encouraged to apply model instructional strategies using authentic learning tasks, conducted in meaningful, problem-solving contexts. Anchored Instruction with problem-based learning is only a method for authentic instruction that uses shared experiences between teacher and learner to enhance the construction of new knowledge within a problem-solving context. The objective of the study was to determine the effectiveness of video-based Anchored Instruction with problem-based learning on the

learning, problem-solving and higher-order thinking skills of prospective teachers. The attitude of the prospective teachers towards video-based anchored instruction as a suitable method is also evaluated by this study. Traditional instruction and anchored instruction were compared on learning, problem-solving and higher-order thinking skills of prospective teachers general and specific programs were anchored instruction resulted in the acquisition of content knowledge but did not support a significant difference overall between anchored instruction and traditional instruction in knowledge acquisition, problem-solving as measured by debate and essays. A positive attitude towards using anchored instruction was expressed by participants. Research discussion shows that continuing research needed to examine the connection between anchored instruction and problem-based learning and to find out the effectiveness of a combination of both strategies.

Glasser (1999) reported that anchored instruction is a paradigm for technology-based instruction based on social constructivist theory it may also be similar to the problem based learning

Baumbach (1995) conducted a multimedia workshop and reported that while instructors given target students moved through the multimedia work station they could focus on applying their new skills for solving the problem presented.

Ellefsen and Hall (1994) found that anchored instruction is a model that can be applied to any grade level or content area. It can serve as both a contest within which teachers can practice what they have learned about technology and science education together, seamlessly in one assignment

Bauer, Ellefsen, and Hall (1994) argued any content area or grade level and integrate content area can be used by anchored instruction. Because anchor serves as both a context within which they can practice what they have learned about a single technology, as well as a common thread with which several technologies can be sewn together".

Often the knowledge and skills students acquired are inert in educational computing courses of pre-service teachers Bauer, Ellefsen, & Hall (1994). These courses usually involve teaching the use of various software tools but there are often limited links to real-life settings and hence the students have difficulty applying the knowledge acquired, to their teaching activities. To overcome the problem of such inert knowledge, there has been a growing interest among educators in applying an anchored instruction approach in educational computing courses in the last decade (Bauer, Ellefsen & Hall, 1994; Bauer & Summerville, 1996; Bauer, 1998; Baumbach, Brewer, & Bird, 1995; Ferguson, 2001; Miller, Smith &Mayes 2002; Wilisams, 2002)

Bauer, Ellefsen and Hall (1994) show two reasons for using anchored instruction incorporation in educational computing course for preservice teachers. They are instruction lends itself as a suitable forum for tracking the use of various technology tools using real-life events, thus helping avoid the problem of inert knowledge. Second, the use of anchored instruction in such courses provides a model for the pre-service teachers to apply anchored instruction in their classrooms.

Bransford (1993) concluded that the overall goal of anchor instruction is to overcome the inert knowledge problem by allowing students to experience changes in their perception and understanding as they are introduced to new bodies of information.

Bransford (1993) reported that the advantages of using video-based anchors that are on video disc and controlled by computers. This increases the amount of information available for students to notice plus it makes possible to help students develop the pattern recognition abilities necessary to function in a particular environment.

Bransford (1993) reported that an occurrence, story or situation that includes a problem or issue to be dealing with it that is of interest to the students. Students become more actively engaged in learning by anchoring instruction because of anchor surrounded by all the related activities.

Bransford (1992), in his study an approach in instruction, revealed that angered instruction provides an authentic setting in which students can think as expert problem solvers.

Young and Kulkowich (1992) reported that anchored instruction represented a new way to immerse students in realistic complex problem-solving situations. According to ecological psychology, every student will get an environment of anchored instruction so that he will apply his problem-solving skills.

Young and Kolikowich (1992) anchored instruction is instruction situated in a complex enough to provide meaning and reasons for why information is useful.

Situated cognition is an important theory concerning the nature of learning. The theory consists of an important implication for the design and development of classroom-based instruction. It is also a learning theory that emphasizes and promotes real and authentic learning. In a situated learning environment, such as Anchored Instruction, learning skills and knowledge occurs in a context that reflects how knowledge is gained and applied in everyday situations (Lave & Wenger, 1991).

CTGV (1990) found that anchored instruction includes the establishment of semantically rich, shared environment that allows students and teachers to find and understand the kinds of problems that various concepts, principles, and theories were designed to solve the problems. CTGV reported that it is possible to design video-based anchors that help students experience problems and opportunities faced by real mathematicians. These videos could include well-respected experts thinking allowed as they attempt to solve novel problems.

Bransford (1990) anchored instruction begins with a focal event or problem situation that provides an anchor for student's perception and comprehension. Ideally, the anchor will be intrinsically interesting and will enable students to deal with a general goal that involves a variety of related sub problems and sub-goals

Bransford et al., (1990) defined Anchored Instruction as "a focal point or problem situation that provides perception and comprehension. Mc Larty et al., (1990) expanded on this definition and added that anchored instruction is "A rich shared environment that generates interest and enables students to

identify and define problems while they explore the content from many different perspectives" Research study (CTGV, 1990) has found that the use of anchors facilitates communication among students and other community members. For example, anchors can be used to help parents to understand what it is like to solve the kinds of complex problems that the students are working on. They might also notice areas where they can supply additional information (CTGV, 1993). Video content for Anchored Instruction helped to provide motivation and well-defined goals for reading to learn. Students in the anchored group are much more likely to use newly targeted vocabulary spontaneously that are those in the comparison group. Advantages of anchored over non-anchored lessons were found in story writing, vocabulary usage, and the acquisition of relevant knowledge of history (CTGV 1993).

Brown (1989) have revealed that being learned cannot be separated from an integral part of what is learned. Situations might help to co-produce knowledge trough activity. The learner must learn in a real-life context whereby the scientific knowledge to be acquired would be embodied in the experiences of the learner, creating an opportunity for them to interact in the context of the real-life situation. He also founds that in course material for an on line lecture prepared by the course instructor included reading from the research literature on anchored instruction situated learning and review of the jasper Woodbury series provided the base knowledge needed for the graduate students to develop the assignment for an anchored lesson. Criteria for the lesson included objectives for the lesson that are correlated with the North Carolina standard courses for study an authentic problem scenario related to the community embodied links to electronics resources in the teacher

produced document. Brown founds that the current use of video for anchored instruction includes streaming videos as well as downloaded clips through on line resources such as "united streaming". Even though subscription websites, many school systems in the region of the university are finding the streaming videos useful for classroom instruction. Teachers may show the entire contents of the video or a small pre-selected clip that contains specific information needed to solve the problem within the anchored lesson. Similar to codes used with video disc technology the design of this resource permits bookmarking of specific video clips timed from one to several minutes in length. Anchored instruction facilitates problem-solving, transfers from macro context to a different environment is motivational for both teachers and students and is best used when students have the opportunity for engaged discussion related to an authentic problem.

Brown et al., (1989) have revealed through their studies that what is being learned cannot be separated from an integral part of what is learned. Situations might help to co-produce knowledge through activity. The learner must learn in real-life contexts whereby the science knowledge to be acquired would be embedded in the experiences of the learners, creating an opportunity for them to interact in the context of real-life situations.

Anchored instruction creates environments that permit sustained exploration by students and teachers and enable them to understand the kinds of problems and opportunities that experts in various areas encounter and the knowledge used as a tool (CTGV, 1989).

Instructors of Anchored Instruction help the students to comprehend the complexity of stories by focusing their attention on a character's traits and

motives for actions, and on conflicts between the likely to link character actions and events to goal statements and goal resolution (Risko et al., 1989).

The authenticity of anchored instruction explains in the context of Jasper that the first level of authenticity involves the objects and data in the setting. The second level of authenticity involves the degree to which the tasks that students are asked to perform (CTGV, 1989).

Shrerwood, Kinzer, Hasselbring, and Bransford (1987) founds that the primary goals of anchoring instruction are to help students explore the same domain from multiple perspectives, the random access capabilities are particularly useful for the work.

Educators accepted that prepare the students for learning to think for themselves and to solve problems Glaser (1985). It directs the attention of educators to process involved in thinking instead of the content of thought. Research demonstrates that knowledge of important content, knowledge of concepts, theories and principles-empowers people to think effectively. Without appropriate knowledge, people's ability to think and solve problems is relatively weak (Bransford et al., 1986; Simon, 1980).

Laird (1985) reported that video allows a more veridical representation of events than texts; it is dynamic, visual and special; and students can move easily from rich mental modal of the problem situations.

Bransford (1979) argued that many students know that the problems posed at the end of a chapter require the application of the concept and operations introduced in that chapter. One important benefit of using a macro

context is that it enables teachers to meaningfully integrate instruction across traditional subject areas, and in so doing may facilitate students' acquisition of non-inert knowledge. A related pedagogical benefit of integrated instruction is that it may facilitate initial learning of information (Beck & McKcKeown, 1988).

Vygotsky (1978) argued that social interaction plays a major role in the development of cognition. Vygotsky's Socio-cultural theory contends that an individual's development cannot be understood without reference to the social environment in which the individual is situated Driscoll (2000)

Hanson (1970) reported that new theories and principles are very much relevant to experience the changes in thinking and idea of the students' one main advantage of anchored instruction package is that the context is usually a visual format rather than text.

Theoretical Overview of Emotional Regulation

The theoretical foundation of Emotional regulation analyze as emotion as one among the affective process and emotional regulation relates to other forms of self-regulation.

Emotions are a complex set of cognitive, behavioral, and physiological responses to internal and external stimuli (Ekman & Davidson, 1994). Emotion is first, mentioned by James (1884). According to Frijda (1993), emotions typically arise in response to an event, either internal or external, that has a positive or negative meaning for the individual and it is shorter and more intense and can be distinguished from mood which is comparatively a

prolong reactions. Emotions are thought to arise when an individual attends to a situation and understand it as being relevant to his or her current goals (Lazarus, 1991).

Emotion and Related Process

Contemporary functionalist perspectives emphasize the important roles emotions play as they ready necessary behavioral responses, tune decision making, enhance memory for important events, and facilitate interpersonal interactions. However, emotions can hurt as well as help. They do so when they occur at the wrong time, or at the wrong intensity level. Inappropriate emotional responses are implicated in many forms of psychopathology (Campbell-Sills & Barlow 2007).

Emotion refers to an astonishing array of happenings, from the mild to the intense, the brief to the extended, the simple to the complex, and the private to the public (Gross & Thompson, 2007). Emotional is a moved up condition of the organism involving internal and external changes in the body. It is an affective experience that shows a difference in overt behavior. Emotions are complex psychological and biological responses consisting of subjective feelings, physiological reactions, and expressive behaviors, to internal and external stimuli. Emotional experience leads to several physical and physiological changes in the organism.

Emotion regulation has its base in the study of psychological defenses, psychological stress and coping, attachment theory, and of course emotion

theory. Emotion regulation primarily attained prevalence as a clear frame in the development literature (Gross, 2006).

A primary function of emotions is to coordinate response systems (Levenson, 1999), the first sense of emotion regulation is coextensive with emotion. Second usage, in which emotion regulation refers to the heterogeneous set of processes by which emotions are themselves regulated.

Emotion regulation process may be automatic or controlled, conscious or unconscious, and may have their effects at one or more points in the emotion generative process. Because emotions are multi-componential processes that unfold over time, emotion regulation involves changes in "emotion dynamics"(Thompson, 1990), or the latency, rise time magnitude, duration, and offset of responses in behavioral, experiential, or physiological domains. Emotion regulation may dampen, intensify or simply maintain emotion, depending on an individual's goals. Emotion regulation also may change the degree to which emotion response components cohere as the emotion unfolds, such as when large changes in emotion experience and physiological response occur in the absence of facial behavior. Both intrinsic and extrinsic regulatory process is essential because emotions have an intrinsic and extrinsic effect.

Core Features of Emotion

First, Emotions arise when an individual attends to a situation and sees it as relevant to his or her goals. The goals that support this evaluation may be enduring or transient. Goals may be central or peripheral conscious and

complicated or unconscious and simple. Whatever the goal, and whatever the source of the situational meaning for the individual, it is this meaning that gives rise to emotion.

Second, Emotions are multi-faceted, whole-body phenomena that involve loosely-coupled changes in the domains of subjective experience, behavior, and central and peripheral physiology Mauss, Bunge and gross (2005). Emotions not only make us feel something, they make us feel like doing something Frijda (1986). Maturational changes in behavioral and physiological response systems involved in emotion play a fundamental role in the development of emotion, particularly in infancy and early childhood.

Third, the multi-system changes associated with emotion are rarely obligatory. Emotions do possess an imperative quality – which Frijda (1986) has termed "control precedence" – meaning that they can interrupt what we are doing and force themselves upon our awareness. However, emotions often must compete with other responses that are also occasioned by the social matrix within which our emotions typically play out. The malleability of emotion has been emphasized since James (1884), who viewed emotions as response tendencies that may be modulated in a large number of ways. In this aspect of emotion that is most crucial for an analysis of emotion regulation, because it is this feature that makes such regulation possible.

The Modal Model of Emotion

Together, these three core features of emotion refer to as the "modal model" of emotion: a person-situation transaction that compels attention, has particular meaning to an individual, and gives rise to a coordinated yet

flexible multi-system response to the ongoing person-situation transaction. Psychologically relevant "situations" also can be internal, and based on mental representations. Whether external or internal, situations, are attended to in various ways, giving rise to appraisals that constitute the individual's assessment of –among other things-the situation's familiarity, valence, and value relevance (Ellsworth & Scherer, 2003). Different theorists have postulated different appraisal steps or dimensions, and these appraisal processes change developmentally, but there is broad agreement that it is these appraisals that give rise to emotional responses. The emotional responses generated by appraisals are thought to involve changes in experiential, behavioral, and neurobiological response systems.

Emotional Regulation and Related Constructs

Among effective processes emotion regulation as subordinate to the broader construct of affect regulation. Under this broad heading fall all manner of efforts to influence our valence responses (Western, 1994). Affect regulation includes four overlapping constructs 1) coping 2) emotion regulation 3) mood regulation and 4) psychological defenses. Because virtually all goal-directed behavior can be constructed as maximizing pleasure or minimizing pain – and is thus affect regulatory in a broad sense – Coping is distinguished from emotion regulation by its predominant focus on decreasing negative effect, and by its emphasis on much larger periods. Moods are typical of longer duration and are less likely to involve responses to specific "objects" than emotions (Parknson et al., 1996). Due to their less well defined

behavioral response tendencies, in comparison with emotion regulation, mood regulation and mood repair are more concerned with altering emotional experience than emotional behavior (Larsen, 2000). Like coping, defenses typically have as their focus the regulation of aggressive or sexual impulses and their associated negative emotional experience, particularly anxiety. Defenses usually are unconscious and automatic (Westen,) and are usually studied as stable individual differences (Cramer, 2000).

Emotion regulation is finding a conceptual framework that can help to organize the myriad forms of emotion regulation that are encountered in everyday life. The modal model of emotion suggests one approach; it explains a sequence of processes involved in emotion generation, each of which is a potential target for regulation. Modal highlights five points at which individuals can regulate their emotions. These five points represent five families of emotion regulation process: situation selection, situation modification, attention deployment, cognitive change, and response modulation (Gross, 1998).

Models of Emotion Regulation

Emotion regulation acts as a prerequisite for any other developmental tasks, powerful emotions can disarrange and disorder numerous psychological process control of their experience and expression has been taken in to account for the prime state regulation, behavioral analysis, intellectual processing, and social skill.

Emotion has been portrayed as a high phenomenon of crucial progressive evolutionary significance in previous researches on emotions and

an idea of the ongoing studies related to the present area line given in this chapter. The concept of emotion regulation is a popular term in the psychological literature. The term has been used directly or indirectly in hundreds of diverse studies. Emotion regulation refers to the tries to impact the kinds of emotions people experience, when they experience these emotions, and how these emotions are expressed and experienced Gross (1998)

The psychoanalytic tradition

Psychoanalytic tradition is one among the significant prototype in the contemporary study of emotion regulation conflict between biologically based impulses and internal-external restraining factors are emphasized by this tradition. Anxiety has been used as a familiar name by Freud for negative emotion and discussion of his views on anxiety regulation ideally would be expressed in a general psychoanalytic theory of affect. Abnormal defenses are seemed to develop as children associate situations or urge with an extraordinary anxiety and train to equilibrates this anxiety by distinctive and problematic mode of anxiety regulation. The approach comprises of learning new ideas regulate anxiety, partially by rightful emotional experience. In which awful effect of impulse expression fails to materialize.

Cognitive emotional regulation

Cognitive emotional regulation refers to the conscious, cognitive way of heading the intake of emotionally arousing information (Garnefski, Kraaij & Spinhoven, 2001; Thompson(1991) and can be considered part of the broader concept of emotion regulation defined as "all the extrinsic and

intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features" Gross (1999); Thompson (1994). Research shows that the regulation of emotions by cognitions or thoughts is inextricably associated with human life and helps people to keep control over their emotions during or after the experience of threatening or stressful events (Garnefski et al., 2001).

The capability of advanced thinking and regulating emotions through cognitions is universal, large individual differences exist in the amount of cognitive activity and in the content of the thoughts by which people regulate their emotions in response to life experiences, events, and stressors.

The concept of conscious, cognitive, emotion regulation is narrowly related to the concept of cognitive coping. One important difference between the two perspectives is that both the widely accepted problem-focused and emotion-focused dimensions of coping include a mixture of cognitive and behavioral strategies, while the cognitive emotion regulation theory is based on the assumption that thinking and acting refer to a different process and, therefore, considers cognitive strategies in a conceptually pure way, separate from behavioral strategies (Garnefski et al., 2001).

According to Philippot, Baeyens, Douilliez, and Francart (2004) emotion regulation, not merely a simple phenomenon, but a process comprising of many related systems, perception, and attention eg. An emotional response may be triggered by one's perception of loss. Even if one can perceive a kind of information from various sourced, he or she usually

selectively pay attention to one special part of the information. Besides, the cognitive scheme that is a memory of one's experience may also influence human effective behavior and cause decision making. Negative emotions and events could be regulated and minimized by actively making decisions and taking actions, Philippot and his associates also realized the significance of the instinctive feeling of experience in the entire process of emotion is regulative. Moreover, Philippot and his associates' model proposed a base for conceiving mode of emotion regulation.

Philippot and his associates proposed a base for conceiving mode of emotion regulation.

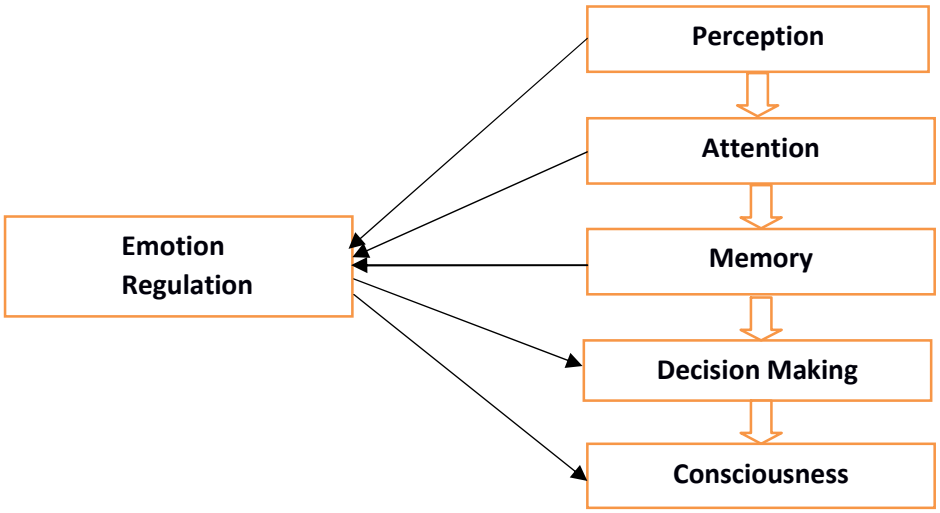


Figure 1. The cognitive model of emotion regulation (Adapted from philoppot, Baeyens, Douilliez, And Francart., 2004)

Process model of emotion regulation

"Gross (2001) observed how personal experience, expressed and check their emotions and suggested a process model of emotion regulation. Gross opined that emotional response tendencies include experiential behavior and physiological systems which could be regulated in many ways.

"This model proposes that emotions may be modulated by manipulating the input to the system (antecedent-focused emotion regulation) and by manipulating its output (response-focused emotion regulation) Antecedent-focused emotion regulation include situation selection. In which one approaches or avoid certain people or situation based on their likely emotional impact; situation modification, in which one modifies an environment to alter its emotional impact; attention deployment, in which one turns attention toward or away from something to influence one's emotions; and cognitive change, in which one

Revaluates either the situation one is in or one's capacity to manage the situation to alter one's emotions. Response-focused emotion regulation also includes a multiplicity of types, such as strategies that intensify, diminish, prolong, or curtail ongoing emotional experience, expression, or psychological responding. The fundamental claim of this model is that emotion regulation strategies differ in when they have their primary impact on the emotion-generative process"

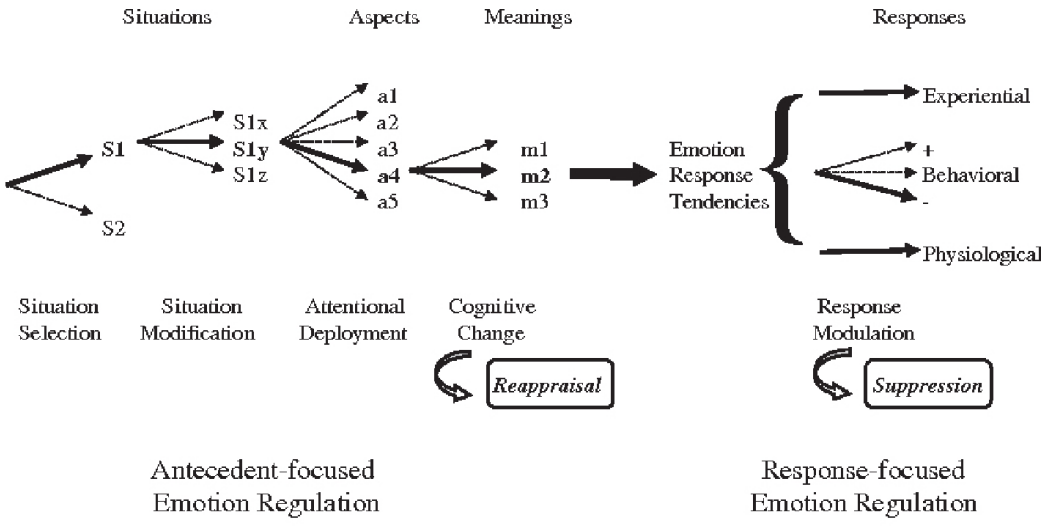


Figure 2. Process model of emotion regulation (Adapted from Gross, (1998)

"According to the process model, emotion starts with an evolution of implicit or explicit cues. Certain evaluation forces a related set of behavioral, experiential and physiological emotional response tendencies that together facilitate adaptive responding to perceived challenges and opportunities, however, these response tendencies may be regulated, and it is this regulation that provides a final form of manifest emotional response.

Functionalistic Theory of Emotion Regulation

The functionalist theory of emotion gives a base for comprehending the significance of emotion regulation to adaptive psychosocial functioning. The functionalist theory explains emotions as "bidirectional process of constituting,

Maintaining, and/or disrupting important association between an organism and the (external or internal) surrounding." Emotions may be experienced as subjective feeling states, physiological excitement, impulse, or intellectual or behavioral expressions, and the process to change the individual and persons in the surrounding to the circumstance of a significant incident and to constitute goal-directed behavior Barrett & Campos (1987). From a functionalist viewpoint, each emotion is related to a rare motivational function for the person and the social situation. As an instance, unhappiness acts to indicate the self and others that support needed. Annoyance organizes behavior to get the better hindrance to accomplishment.

"Functionalist theory advocates that emotional experience and expression are influenced by personal characteristics such as biological

factors and learning history, the emotion-eliciting event, and the social context." influenced emotional experience and experience. Barrett and Campos,(1987); Saarni, Mumme, And cameos, (1989) learning to attend emotional information and to alter emotional experience and expression is requisite to goal accomplishment and adaptable functioning

The viewpoint of Thompson (1994) "emotion regulation contains outward and inherent processes dependable for inspecting, assessing, and customizing emotional reaction to attain one's goals" Thompson (1994). "getting by tactics for dealing negative affect stand for only one angle of emotion regulation, and even if emotion regulation is generally related with the lessening of physiological excitement or the reducing emotional expression, impressive emotion regulation hinges on the situation and at times may implicate reinforcing emotions Thompson (1994) positive emotion should also be regulated and, the efficiency ability to experience and sustain positive effect determines the healthy emotion regulation, and also regulates positive emotion. As Thompson inferred further facet of emotion regulation embody the capacity to an end to end assess emotional effect to rightly determine

Two factor models (Campos, Frankel, & Camras, 2004).

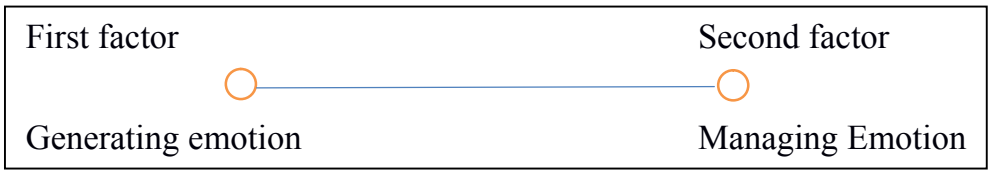


Figure 3. Two factor model of emotion regulation (Adapted from Campos, Frankel, & Camras, 2004)

In the two factor mode, the first is a process that generates emotion and the second that manages emotions. Both factors are used to manage and mismanage emotion rightfully

Model of Emotion sensitivity versus emotional regulation (Kuhl, 2008 & Koole, 2009)

"Model of emotion sensitivity versus emotion regulation that takes into account are taken into account in model of emotion sensitively versus emotion regulation. The model consists of two reactions: (a) primary reaction, and (b) secondary reaction. The primary reaction suggests that person's emotional experiences are highly influenced by their degree of emotional sensitivity. Higher the individuals' emotional sensitivity has a higher level emotional response. Whereas lower the lower the emotional sensitivity have a lower emotional response. Individuals they have a higher level emotional response, experience the secondary reaction that comprise emotion regulation. The secondary response consists of two types of emotion regulation (a) up-regulation and (b) down-regulation. The level of emotion response in up-regulation and is decreased the magnitude of emotional response in down-regulation

Koole (2009) also organizes "three emotion generating system may be used as strategies for emotion regulation (1)attention (2) knowledge representation, and (3) body manifestation. And there are psychological functions (a) need-oriented (b) goal-oriented and (c) person-oriented. He also identified the relevant.

Empirical emotion regulation strategies in regards to these systems and functions need-oriented emotion regulation refers to individuals' needs to experience low degrees of negative and high degrees of positive emotion. Goal-oriented emotion regulation is driven by a single verbally describable goal, standard or job that could be motivated by people's beliefs or emotionally charged information. Person-oriented emotion regulation stands the truthfulness of individuals' personality systems, which include their desires, objectives, intention, and other personal factors. It should be noted that unlike the aforementioned theorists' emotion regulation strategies, environmental factors and manipulation of environment included as a part of Koole's (2009)categorization of emotion regulation strategies., have not been included manipulation of the environment. This is additional evidence of how different theorists view emotion regulation"

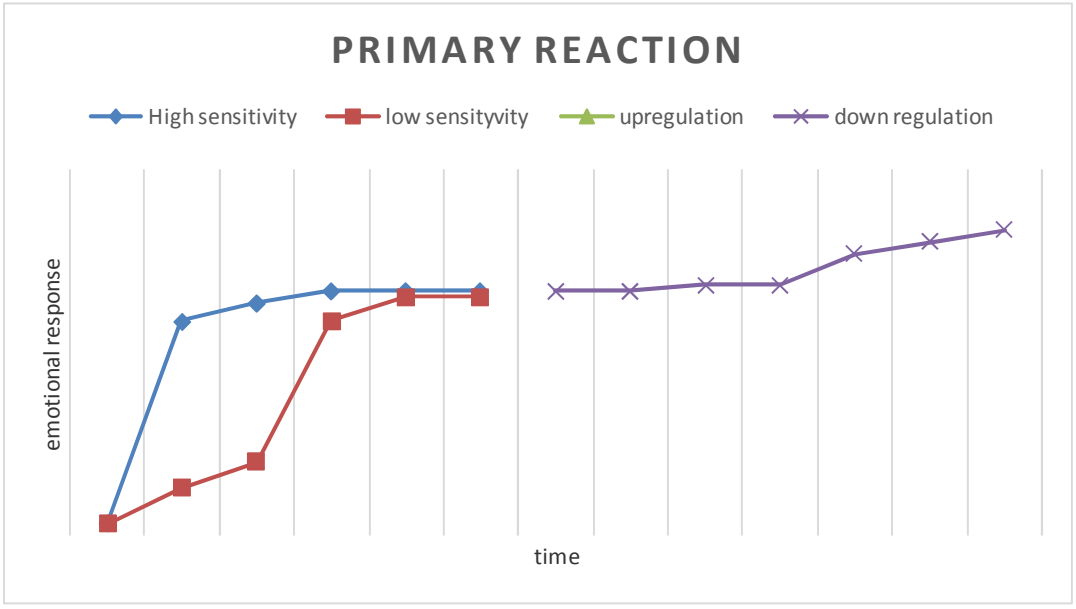


Figure 4. Model of emotional sensitivity versus emotional regulation (Adapted from Koole, 2009)

Table 1

Categorization of Emotion Regulation Strategies (Koole, 2009)

Emotion Generating System	Psychological function		
	Need-oriented	Goal-Oriented	Person-oriented
Attention	Thinking pleasurable or relaxing thoughts: Attentional avoidance	Effortful distraction: thought suppression	Attentional counter regulation meditation mindfulness training
Knowledge	Cognitive dissonance reduction Motivated reasoning self-defence	Cognitive reappraisal	Expressive writing. Specification of emotional experience: activating stored networks of emotion knowledge
Body	Stress-induced eating Stress-induced affiliation	Expressive suppression response exaggerating venting	Controlled breathing progress muscle relaxation

Implicit Theories of Emotion and Emotion Regulation

The discussion on implied theories of emotions reveals that the persons who consider emotions are static should be less likely to consider that they can modify their emotions; those who possess the ability to control their emotions have the belief that emotions are malleable. The people who consider emotion as static have no impulse to take effect to modify their emotions through going tactics as cognitive reappraisal. Those who try to actively modify their emotion by altering their appraisal are of emotion eliciting events. They view emotion as malleable sometimes the experience of

emotion from its expression may be separated by the individuals' suppress or mask the expression of their feeling without modifying their emotional experience Gross (1998). Thus the current discussion suggests that implicit theories of emotion might be focused on emotion experience

Studies Related to Emotional Regulation

Bourikerana and Frenzenac (2020) reported that teachers faking emotions were found to be positively linked with class level engagement. The obtained results imply that interventions posturing teacher's emotion regulation strategies can be promising, as they were likely or beneficial both for teacher wellbeing and for teaching performance. Tungus (2016) investigated emotional labor in academics with considering tenure and gender discovered that faulty law in power (untenured faculty) exhibited a higher level of emotional labor when interacting with students as compared with colleagues high in power (tenured faculty). Additionally, tenure has a mitigating effect on emotional labor amongst male faculty, but heightened stress amongst female faculty.

Volet, Seghessl and Ritchie (2019) reported that students' emotional experiences and degree of subsequent engagement in collaborative learning of scientific concepts appeared to be influenced by the characteristics of the groups and of the activities. Antoniados and Quintan (2018)investigated higher education teachers' emotional values and sense of moral purpose by examines 66 cases of teacher's emotional experiences, the study found that approximately 1/3 of the cases referenced multiple moral concerns, suggested the complexity of both emotional and ethnical demands in teaching.

Quinland and Antoniadu (2018) did a study on the little thriving on challenges: how immigrant academies regulate emotional experiences during acculturation. The study makes an original contribution firstly by applying a model of emotion regulation that in researching academic life. Buric, Soric, and Penezic, (2016) reported about development and validation of academic emotion regulation questionnaire. The study aimed to develop a psychometrically sound and contextually specific multidimensional self-report instrument for assessing the specific emotion regulation strategies. The developed instrument has eight scales – avoiding situations, developing competences, redirecting attention, reappraisal, and suppression, respiration, venting, and seeking social support.

Sclibent, and Baner (2017) in the study emotion regulation and academic underperformance: the role of school burnout found that emotion regulation strategies preceded the effect of school burnout. School burnout intern was identified as the mechanism linking as mediating emotion regulation strategies to academic outcomes.

Hafiz, (2015) conducted a study on emotion regulation and academic performance revealed that there is a significant relationship between expensive suppression CGPA; however, no significant relationship existed between cognitive reappraisal expressive suppression did not predict students' academic performance.

Hsich (2012) discovered the relationship among adolescent emotion regulation strategies, the study found that self-concept–mediates the

relationship between emotion regulations and internalizing problems. Bender, Reinholdt-Dunne, Esbhorn and Pons (2012) examined gender differences in the relation between emotion deregulation. The results show that girls experience more anxiety and difficulties in regulating their negative emotions.

Farmor and Kashden (2012) found, how the use of two emotion regulation strategies, emotion suppression, and cognitive reappraisal predicts the generation of emotions and social events in daily life. The study found that pure positive social events and less positive emotion. But people low in social anxiety reported pure negative social events on days after using cognitive reappraisal to reduce the stress. Hoeksema (2012) found that women use most emotion regulation strategies than men

Trogol and Medrano (2012) studied the contributions of personality traits using the big five-factor model and difficulties in emotion regulation to predict academic satisfaction in a sample of university neither the big five traits nor difficulties in made a significant contribution to the prediction of academic satisfaction.

Kivisto (2011) revealed that Emotion regulation indicated to mediate the developmental context of adolescent depressive symptoms, alcohol problems and peer aggression. Erisman and Roemer (2010) found that the relational relationship between mindfulness, skills and emotion regulation in an attempt to elucidate the role of mindfulness in healthy emotion regulation.

Laible (2010) found that emotionality and emotional regulation are presumed to interact to produce social behavior. Gross (1999) reported that

individually regulate their emotions by deciding whether or not to experience certain emotions and whether and how to express them. Koole et al., (1994) reported that emotion regulation is an ongoing process of individual emotion patterns concerning moment by moment contextual demands.

Hastings et al., (2009) identified those psychological and subjective aspects of emotional responses closely connected with the effectiveness of Emotional Regulation. Smith – Israel (2009) Adolescents become aggressive, depressive, and prone to the use of drugs as a result of the lack of emotion regulation capabilities. Joorman and Gotlib (2010) found that the association between cognitive processes and emotional regulation strategies. It was also reported that depressed participants exposed the predicted lack of inhibition when processing negative material

Koole, Van Dillen, and Sheppes (2009) found that the major emotion generating system that is targeted in emotion regulation are attention, knowledge, and the body. The main functions of emotion regulation are promoting the satisfaction of hedonic needs, facilitating goal achievement and optimizing global personality functioning. Yazies and Yazies (2019) reported that patients with OCD had a lower ability with regards to reading minds in the eyes on emotion regulation than healthy individuals. Patients with an obsessive-compulsive disorder who had a poor insight had more difficulty in reading minds in the eyes and emotion regulation than those with good insight.

Gratz (2007) reported that clinical and empirical literature suggests the importance of psychological treatments such as emotional acceptance and

promotion through adaptive ways of responding to emotional distress for treating emotional deregulation. Izard, Stark, Trentacosta and Schultz (2008) found that persons interact dynamically and continuously in their life helps to develop emotional schemas through the concepts and techniques that promote emotional regulation, it helps to attain favorable behavior.

Morris, Silk, Steinberg, Myres and Robinson (2007) found that children learn about emotion regulation through observational learning, modeling and social referencing. Upshur (2011) discovered that the children Emotion regulation significantly associated with family functioning aspects of communication, affective expression, and affective involvement. Adrian et al (2009) identified the relations between Emotional Regulation and social contextual factors.

Gaziano, Reavis, and Calkins. (2007) studies on emotion regulation and children's early academic success disclosed that emotion was positively associated with teacher reports of children's academic success and productivity in the classroom and standardized early literacy and math achievement scorer. Academic outcome uniquely predicted by emotion regulation as well as the quality of student-teacher relations. Andres et al (2017) conducted a study on emotion regulation and academic performance: a systematic review of empirical relationships. 17 articles were selected and analyzed. Discovered even empirical studies are very scaring emotion regulation is a predictive factor of academic performance. For emotion regulation and academic performance.

Margret (2003) revealed the relation between emotionality, emotion, regulation, and children's behavioral adaptation in a longitudinal design. Richard and John (2006) reported that there was a novel experience for many young adults to think explicitly about their goals and strategies for emotion regulation. Mennin, Holaway, Fresco, Moore & Heimberg (2007) found that exploratory factor analyses on factors of emotion to demonstrate four factors-heightened intensity of emotion, poor understanding of emotions, and negative reactivity to emotions.

Chang (2002) discovered a model of harsh parenting that has an indirect effect, as well as a direct effect on child aggression in schools through the mediating process of child emotion regulation. Koole, Van Dillen and Sheppes (2009) emotional regulation can be improved through training, including the regulation of attention, cognitive appraisals, and expressive responses. Suveg, Morelen, Brewer and Thomassin (2010) found that high child temperament reactivity was expected to compute to child emotion dysregulation because high reactivity in response to a novel situation and people are likely to make adaptive emotion regulation difficult.

Arsenio (2002) done a study on emotionality emotion regulation and school performance in middle school children. The result indicated that although students emotion regulation, general affective disproportions, and academic affect were related to each other, each of these variables also made a uniquely significant contribution to students GPA over and above, the influence of other cognitive contributors, , besides the study support for the role of socio-emotional factors in students school performance.

Theoretical Overview of Process Skills in Social Science

Scientific investigation conduct by using intellectual skills has emerged from science education because it has contributed to thinking ability inculcate among students to fulfill their curiosity related to their surroundings by systematic inquiry. These skills are viewed as the foundation for scientific inquiry, the development of intellectual skills needed to learn a concept and the promotion of scientific literacy among students Anderson (2012). These skills enable students to set their own goals, hold responsibilities, increase the permanency of learning, develop research methods and their thinking skills (Karsli, Yeman, & Ayas, 2010).

A classic model of Process Organization AAAS, Science: A Process Approach, (1965) is designed around eight basic and five integrated processes. Basic processes are Classification, Inference, Communication, Measurement, Numbers, Observation, Space/Time, Prediction and integrated processes are Formulating Hypotheses, Defining Operationally, Controlling Variables, Interpreting Data, and Experimenting.

Instead of other terms like the scientific method, scientific thinking, critical thinking and process of science, Science process skills is a common term used generally planning, following direction, observing, experimenting, measuring, predicting and inferring. All are concerned with processing evidence and ideas and all are included in process skills.

Harlen (1992) scientists employ these science process skills as procedures in investigation and discoveries thus it can be inferred that science process skills are the set of cognitive skills that are accomplished by our mind with sensory organs in process of science. There was a gradual growth in the science program. It is observed a paradigm shift in the emphasis of teaching

from content to process skills (AAAS). SAPA (science a process approach) describes that scientific process skills are defined as transferable skills that apply to many sciences that reflect the behavior of scientists.

To emphasize the process of science in teaching there were some curriculum change projects were launched and renovated by physical science study curriculum (PSSC), science a process approach (SAPA), Harvard physics project (HPP), elementary science study(ESS), school science curriculum project (SSCP), Minnesota mathematics of science teaching project (MINNEMAST), the conceptually oriented program in elementary science (COPES), science curriculum improvement study (SCIS), elementary school science curriculum WPS & Nuffield Improvement study (ESSP), chemical education material study (CHEM STUDY), chemical bond approach (CBA), science in process, Warwick process science (WPS), Nuffield courses in the UK

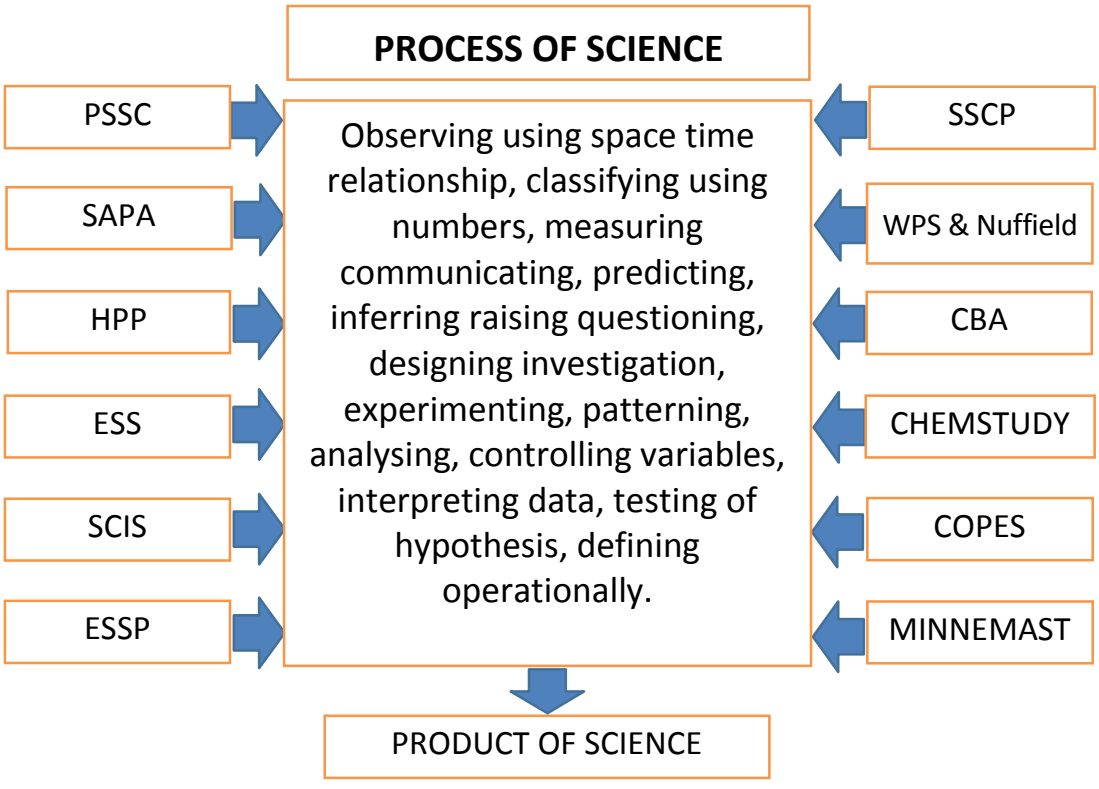


Figure 5. Curriculum projects

The curriculum reforms and projects result from new approaches that focused on process skills (Such as inquiry approach, investigatory approach, and discovery approach) these approaches are more effective in increasing scientific achievement and attitude than the traditional science teaching program. By this current science education standards such as national science teachers association NSTA (2002), national research council NRC (1996), the benchmark for scientific literacy (1993), and science for all Americans (SAA 1990) suggested the new approach for science process skills among the school students secondary school commission (1952) had considered the importance of process aspects of science and recommended practical activities and laboratory work should be included in science curriculum to provide scientific experience among the students. Thereafter, the importance of process skill is highlighted by all commission and policies. Now a paradigm shift from contempt to process science has occurred in a science curriculum. NCF (2005) also recommended as the development of process skill in one of the objectives of teaching in primary and secondary classes

Science process skills classification

According to the American Association for the advancement of science (AAAS) UNESCO 1992, there are 13 process skills under basic and integrated process skills. Basic process skills are foundations for integrated process skills. Observation, classification, communication, measuring, prediction, inference, etc. are the basic process skills identifying and defining variables describing the relationship between variables formulating and testing hypothesis collecting data designing investigation and experimentation

manipulating the variables identifying the caused affects acquiring organizing and displaying the data with charts, graphs, tables, All this come under integrated process skills all the skills are reciprocal and there is no hard and fast rule for its order and sequences but observation is often come first other follow later.

Observation

Observation skill is the prerequisite to all other science process skills. It is very important and placed prime among the process skill. Observation means perceiving information through sense organs. It is not near seeing but collecting data using all senses. By seeing alone students can notice some attributes like size, shapes, the color of the objects; but observation is more than seeing. During an observation, one can use a hand lens and microscope for observing the minute detail about the particular events or occurrences. Observation should be till the end of the event or completion of experiments not just only in the beginning.

Classification

Classification is the process of sorting ordering grouping or arranging subjects based on similarities and differences, larger or smaller and other common characteristics. It is a process of grouping the objects by common property such as color, shape, and size. The classification can be qualitative as well as quantitative. When a classification is based on size, shape, color, habit, habitat, and nature it is called qualitative classification. It is called quantitative classification- other kinds of classification are binary or

multistage when classification is made as two subsets it is called binary classification. In multi-stage classification, each subset follows consecutive binary classification or succession of binary classification. Binary classification is the most basic form of classification. There are different ways of classifying things, objects, substances, and organisms. One must think before classifying whether the things are presented present or not thorough observation is the prerequisite for arranging the things. Classification skill helps to comprehend and conceive the scientific ideas in a systematic manner, to retrieve information from a conceptual scheme, to develop creativity, divergent thinking, to associate the objects having equal characteristics through which concepts can be constructed.

Communication

Communication skill helps to convey the message rightly from one person to another by verbal and nonverbal ways; if the message is passed through orally using scientific terminologies that communication is called verbal communication. If the message is passed through charts, graphs, math, symbols, science, drawings, etc. the communication is called nonverbal communication. Harlan argues that recording communication is an important part of an activity and it helps for further discussion and display through adequate communication ways for easy understanding. Communication skills help the learner to develop confidence and reflect on their learning. Scientists make model graphs so on to convey information. Observation and communication are very important process skills that are essential for an individual to relate to the physical world.

Measurement

It is the process of using numbers to describe objects and events, wherein measuring the measurable attributes, for example, temperature, length, mass, volume, etc. measurement is a process which involves the comparison of an entity, measurement follows calculation after the process, every measurement is with a proper measurement unit, as a centimeter, millimeter, kilogram, weight so on- the tool such as scale, ruler, matter stick, yardstick, balance, clock, thermometer, protractor, screw gauge, tape, etc. are the measuring instrument, measurement devises should be standardized and ensure the proper use of instrument, the capacity of the device so on.

Prediction

Prediction means some statements regarding the future happening it states what might happen or could be expected to happen. Some relevant rare knowledge is its base it is an act based on the previously developed model or experience of predicting the forecasting events. The model means a cognitive representation that relates various aspects to each other it will make an individual more confident in predictions related to a situation for example forecasters to make accurate predictions of future weather condition in a locale within the support of meteorological modal (BENTLEY (2007) prediction will be based on available evidence or past experiences with proper justification. A prediction has a rational base. It is not a wild guess because a guess has no rational foundation. Prediction is based on the available information it consists of learners in using knowledge to decide what will happen if something is changed in a situation in-depth thinking, logical

analysis, and interpretation needed for effective prediction. Prediction is based on inferences before predicting experiment one individual can verify prediction through experimenting.

Inference

It is a process of making a statement based on observation it means making suggestions conclusions assumptions about a particular event based on observation. There is a misunderstanding about observation and inference but inference and observation are different. Observation is the use of one sense to perceive objects and events and their properties. Inferences are making statements or conclusion after a deep observation and understanding of a phenomenon there for observations is the base for any inference, for example, a student observing animals and reported that two animals are weak among the animal in this student-made inference based on the observation of the status of the animals sometimes more than one inference can be made based on a list of observations. Inference skill encourages metacognition process and it stimulates higher-order thinking skills, problem-solving skills, and decision-making skills. Inference helps to identify the cause and effect relationship

Process Skills in Social Science

Process skills are an important part of life because it helps to see and understand the surroundings of an individual through scientific vision. Michaelis's analysis of goal statements consistently reveals four basic categories knowledge; thinking process; skills and attitudes, values and behavioral patterns.

Goals in each category are aimed at developing democratic citizenship. The thinking process may be referred to as a cognitive process, the inquiry process, or intellectual abilities or process. The goal in this category gives attention to developing the ability to use models of critical and creative thinking, to problem-solving and decision making and the specific processes included within them. Reading, study and language skills are given special attention so that students will adapt, refine, and apply them as they encounter the vocabulary, concepts, varying styles of presentation, and other distinctive aspects of social studies materials. Participation skills are brought to a high level of development as students take part in various large and small group activities. Among the skills, that fall within the province of social studies instruction is map and globe skills, the ability to interpret time and chronology, and skill in making maps and models.

Social Science consists of conceptual and process knowledge. Conceptual knowledge includes data, concepts, themes, and generalizations; process knowledge is knowledge about values, Models, and methods of study and inquiry. Conceptual knowledge is knowing that content and process knowledge is know-how content(Michaels 1980), Process skills stand for the intellectual skills required for completing a stage or stages of a focused scientific investigation Michaelis(1980)

Michaelis (1980) classified Social Science Process skills such as

- Skill of Observing
- Skill of Comparing

- Skill of locating
- Skill of Measuring
- Skill of inferring
- Skill of Classifying
- Skill of Interpreting
- Skill of Finding Space and time relation
- Skill of hypothesizing
- Skill of predicting
- Skill of Analyzing
- Skill of Evaluating
- Skill of Synthesizing
- Skill of Generalizing

Process skills have great importance in the comprehension of social phenomena and their effect on human beings and their surroundings. It helps to develop students' self-esteem by acting as a researcher through defining problems, collecting and analyzing data and reaching a conclusion and expressing their findings and suggestions. Through which students became more systematic in seeing the social world through the lens of science and they scientifically respond towards local to global issues.

The objectives of social studies teaching in school have equal importance in the development of essential skills in every child (Agarwal, 2004).

By including these process skills in social science in teaching will leads to develop quality of students and increase their active participation in

social life. It will lead to developing social skills among students and they can think critically and scientifically. They can enable to interpret content including visual and text. They will develop the ability in analyzing people, culture, socio-economic events, social institutions so on around the students. Students can identify problems and reach to its solution by sensing the problem accurately and compare varied situations, interpret, summarize and generalize and criticize them.

Social studies help to enhance an individual's growth in knowledge, skills and personal values. Teaching social science to develop the efficiency of students in Process skills in social science sharpen their thinking ability through learning activities that involve students in critical and creative thinking and in decision-making activities.

Studies Related to Process Skills in Social Science

Suryanti (2018) conducted a study on the process skill approach to developing primary student's scientific literacy: a case study with low achieving students on the water cycle reported that learning by using the process skill approach shows an improvement in students' science literacy skills. Students also show a positive scientific attitude.

Yashi and Kahraman (2014) submit a paper on the contribution of motivation doctrine at scientific process skill on secondary school student's critical thinking. The sample of the study was 106 (52 girls and 54 boys) of 7th standard middle school students. Motivated strategies for learning questionnaire (MSLQ) was used as a tool to measure motivational beliefs, as

self-potency, test value, and critical thinking. The findings imply that students who believe that he/she can handle the science tasks, who find science activities useful, interesting or enjoyable and who have high science process skills like observation, questioning, identifying, and stating a hypothesis, designing investigations demonstrate higher levels of critical thinking in science.

Shikili (2013) identified the senior secondary student (+1) in Oman had low attainment of process skill in geography.

Zang and Purta (2011) made a comparative study on student's cognitive content and process skill adopted a cognitive diagnostic modeling approach to match the civic education achievement of 14-year-olds from IEACIVED assessment across the sample of three countries. Four intellectual features depicting the subject matter and sill were realized underlying the ceded test items. Depending on the proficiency of every feature, peoples of these countries were classified into four distinct intellectual outlines, countries were classified into distinct four intellectual profile based on their differences. Changes were noticed in the structure of attribute achievement among the countries. It is noticed that students from Hong Kong were a higher level of basic conceptual knowledge, but they were unsound in analyzing and synthesizing ability and lacking the higher conceptual knowledge testimony from intellectual profiling affirmed the hypothesis that knowledge reasoning and for skill.

Al-Swidi (2010) conducted a study on students' acquisition of science process skills and realized that the students of some Arab countries are low in these skills.

Chabelengula and Mumba (2010) identified correct definitions and explanations of the basic and integrated social science process skills are essential for teaching and learning social content knowledge and social scientific inquiry.

Feyzioglu (2009) in a correlative study investigated a significant correlation with science process skills and efficient laboratory use in basic chemistry course achievement among university students. The scientific process skills questionnaire was used in the study to determine the range to which the science process skills that were taught in laboratory application from the students point of view. The efficient laboratory scale was administrated to measure what extent they used laboratories adequately and the students' achievement scores were assessed by adopting the science achievement test. The sample of the study was 180 generally chemistry students at the university level in the second semester of the 2006-07 academic year. The findings of the study was a positive significant and linear correlation was identified between science process skills explained in laboratory application and adequate laboratory use of the students in their efficiency in laboratory use and achievement in their science process skill and achievement in the course

Yadav and Iqbal (2009) conducted a study on the influence of life skill training on self-esteem, adjustment, and empathy among adolescents .the objective of the research was to find out the significant action of life skill training on self-esteem, adjustment, empathy among adolescents. The samples were 30 male and 30 female students. Self-esteem Inventory (school form).

Adjustment inventory for school students (AISS) and the empathy quotient (EQ) was employed one at a time in two or three days successively, before and after the training. The finding showed that significant importance was noticed among the subjects on self-esteem, emotional and adjustment, educational adjustment, whole adjustment, and empathy. No significant changes were noticed on social and adjustment I pre and postcondition .the life skill training influence in nurturing change in adolescent attitude, through and behavior by providing conducive climate to them.

Beauchemin, Hutchins, and Patterson (2008) conducted a study on "Mindfulness Medication May Lesson anxiety, promote social skills and improve academic performance among adolescents with learning disabilities" using a sample of 34 adolescent students with learning disabilities. It is realized that mindfulness meditation reduces anxiety and pernicious self-focus of attention within successively encourage social skills and academic achievement

The study conducted by Aktamis and Ergin (2008) on the effect of scientific process skills education on student's scientific creativity proved science attitude and academic achievement. The main objective of this research is to identify the influence of teaching scientific process skills education to students to foster student's scientific creativity, attitude to science and accomplishment in science. The study comprises a protest and post-test research model with a control group. The sample of the study is 40 students studying at 7^{th} std of a primary school in Buca District of Izmir province, in Turkey the tool for collecting data include the "combination of force and

motion the energy" chapter achievement scale the science attitude scale and the scientific creativity scale HU and Adey(2002). The findings of the study determined that the scientific process skills education improved the students, achievements, and scientific creativity. No comprehensive development was noticed on the students' attitudes towards science as to the teacher-centered approach.

Settlage and Southerland (2007) opined the social science process skills as integral features of the actions of the socio-cultural though social science and teaching with an eye towards social science process skills are an appropriate entry point for beginning elementary and middle school teachers. As a result, they proposed that social science process skills serve as a very important way for beginning teachers to learn about social science teaching. Therefore, possess a strong conceptual understanding and be able to perform well on social science process skills if they have to effectively in classrooms and society.

Edelman (2004) conducted a study identify that the principal component of conductive practitioner-parent alliances comprises making valid relationship by being direct trustworthy, and carrying having a constant orderly meeting for group personal, holding firm communication, realizing issues to face, and take part in team problem solving and decision making were also seemed to assist to the improved relationship of conducive alliances.

Barbosa and Alexander (2004) conducted a study on teacher's familiarity and interest in social science process skill and conceptual

understanding and performance correlate highly to performance in topic areas of social science. As such social conceptual understanding is widely acknowledging as one of the central goals of social science education

Anderson (2002) also describes that social science process skills form a significant part of scientific social concepts and consequently promote social literacy among students. Hence, social science teachers must be proficient in social science process skills on a multitude of levels and must have the knowledge and understanding to teach the social science process skills.

Mcclure and Nowicki (2001) carried on a study titled as 'Association between social anxiety and nonverbal process skill in pre adolescent boys and girls to identify the potential association. The sample of the study was 62 children of 8 to 10 age group, who accomplished self-reported measures of social anxiety depressive symptomatology, and nonspecific anxious symptomatology, as well as non-verbal deciphering exercise measuring exactness at recognizing intensity in superficial manifestation and vocalic notes. Data were dissected with multiple regression analyses controlling for extrapolated rational competence, and inclusive anxious and depressive symptamatology. Findings support particularly for the hypothesis social anxiety correlates to nonverbal decoding accuracy. Onerous identifying manifestation transmitted in children and adults voices used reciprocated common social distraction and distress. Fearful voices more frequently were mislabeled by children at a higher level of social anxiety.

National Assessment of Educational Progress (NAEP 2000) shows social science process skills are changeable cognitive skills, suitable to all social ventures. Social science process skill fosters a significant increase in subject matter understanding and social knowledge, arguing that the social science content and process skills should be taught together as they complement each other.

Richard (1997) studied the use of process induction and the proactive action mode (PAM) to train research skills over the social studies curriculum. In this, he suggests PAM can be adopted to sustain intensify student's inquiry and discovery in the classroom and field-based research sites. The study takes about overt learning settings, autonomous learning settings, and utilization environment and discus of their application in social studies.

Fisher, Allen, and Kose (1996) carried on a correlative study between the anxiety of problem-solving skills in children with a learning disability (LD) and normal student. In this study, the effect of low, medium and high pre-test anxiety levels on the social and non-social problem-solving performance compared to 45 LD and 45 no learning disability (NLD) boys. The study identifies the LD boys had significantly higher pre-test traits and higher anxiety through the course of a problem-solving session and no ubiquitous effective of LD status was noticed on problem-solving as NLD boys. The means for the task solution suggest a tendency for reciprocity in group and anxiety levels. And suggest being examined taking indeterminate data.

Collect (1990) comes on research on using a cognitive-process approach to teach social skills. This study checked out a cognitive approach adopted to train three secondary students with a justified setback on social skills involving response to criticism. Two secondary aged students effectively learned the process and generalized their accomplishment untrained students after process training.

Barbara (1988) conducted a comparative study on problem-solving skill in social science, making Chicago university students as samples (100) in the problem-solving process of experts and no experts. Finding of the study that the experts did not use a one-solution process, Experts processes varied concerning problem disintegration into sub problem and they favored to represent the problem statement, experts chose logic to solutions they proposed.

Kneedle (1988) carried on research on assessment of the critical thinking skills in History-social science. The study examines the significance of critical thinking for partaking in a democratic society and makes out the critical thinking skills tested in the eighth grade of California. Assessment program gives an extensive appendix detailing critical thinking skills caters a compressive post script account a critical thinking skill continuous a glossary of terms and techniques

Denham and Almeida (1987) researched "children's social problem-solving skills, Behavioral Adjustment, and Interventions". Meta-Analysis of

the Literature were performed to examine reported relations between children's Interpersonal Cognitive Problem-Solving (ICPS) skills and adjustment and to specify the of ICPS training. Children both with differentially abled and normal children were participating in interpersonal cognitive problem solving (ICPS) intervention. Intervention administrated in those involving up to 39 hours of interpersonal cognitive problem solving (ICPS) skills interventions and 40 hours more. The meta-analysis found interventions lasting 40 hours or more lead to better acquired ICPS skills findings: Propitious changes in the self-perceptions can be seen LD students. Intervention using in skill development and self-enhancement. Intervention that used therapeutic method helps beneficial results for students with different ages. The academic intervention seemed especially favorable among middle school students. There be specifically favorable to secondary students by One effective intervention that was included in the meta-analysis targeted parents of students with LD, rather than the students themselves. Parents who participated in a parent's effective training were taught to respond more affirmatively their children, showed important, in their self-concept than the other parents who did not receive training.

Michael (1987), in his study reasoning as a metaphor for skill development in the social studies curriculum, describes mercy to integrate formal social studies skill to gain the objective of improving rational ability in elementary secondary studies, the researcher scrutinizes the facilitation skills

of classification. Classification is a memorable skill that forms the base upon when language use and development is built.

Adey and Marten (1986) conducted a study to determine the level of science process skill in a representative sample of 1-year-old children in Britain. It was found that the level of cognitive demand was a dependable prognosticator of the limiting difficulty of an item

Edward (1982) conducted a comparative study on the generalizing of process skills developed in basic science to the objectives of Florida history. In the study one group had rightly methodological direction in the development of process skills in science making the program science. A process approach – the other group had not been given the right instruction involving process skills and realized the group is a significantly higher level of behavioral competency than the control group. A social studies test designed to utilize and to check for generalization of process skills. From a content setting of science to another social study contest setting, and concluded incompetency the experimental group was substantially gained then the other group and process skills were generalized to other content settings.

Tobin and William (1982) conducted a correlative study on formal ability, locus of control, academic engagement and integrated process skills achievement, and concluded that formal reasoning was the highest involvement in process skill results

Conclusion

Reviews of related literature gives an opportunity to investigator for identify socio-cultural situation that influence in the evolution various variables. Similarly efforts of various personalities and institutions behind the establishment of these variables.

Theoretical overviews of anchored instructional approach, emotional regulation and process skills in social science provide a wide perspective and a baseline for the investigation. A considerable number of studies are conducted in anchored instructional approach in many other subjects in abroad because, present day the relevance of child-centered technology based constructivist method of teaching got momentum. All these teachers include effectively in anchored instruction. But few studies are conducted in the effectiveness of anchored instruction in social science. Although process skills in social science and emotional regulation are seen in many studies as an important variable because these two variables covers students three domains such as, cognitive, effective and psycho-motor. Review of related literature gives clarity in the meaning of variables used in the study and it gives an opportunity to the investigator for identify socio-cultural and situation that influenced in the evolution of various variables in the study, similarly efforts various personalities and institutions behind the establishment of these variables. The review gives a direction for the selection of the effective conduction of experiments by giving light to planning, transaction and evaluation of its effect by using various tools, similarly in the construction of the emotional regulation tool and finding of appropriate tools

for other variables. There is presently no research based on the comparison between anchored instructional approach and existing method of teaching in social science. Similarly no studies found in the effectiveness of anchored instructional approach in emotional regulation and process skills in social science of secondary school students so this study is conducted by the investigator.

CHAPTER III

METHODOLOGY

- *Preliminary Survey*
  - *Variables in the Preliminary survey*
  - *Design of the Preliminary Survey*
  - *Sample selected for the Preliminary Survey*
- *Experiment*
  - *Variables in the Experiment*
  - *Design of the experiment*
  - *Sample selected for the experiment*
  - *Tools used in the Experiment*
  - *Statistical Techniques Used in the Experiment*

METHODOLOGY

This chapter discusses the methodology adopted for the present study. Methodology means the procedure used by the investigator for conducting the study and it explains the detailed description of the research variables and procedures. Method is a set of procedures and techniques for gathering and analysing data (Strauss & Corbin, 1998). Methodology has an important role in deciding validity and reliability of the study. It makes suitable circumstances to conduct a genuine investigation and explore various dimensions of a research problem.

The study mainly aims to establish the effectiveness of an Instructional method based on Anchored Instruction to teach Social Science at Secondary School level in terms of Emotional Regulation and Process Skills in Social Science. In the first phase of the research investigator conducted a preliminary survey to collect data for identifying the existing level of emotional regulation of secondary school students on the basis of gender, locale and type of management. In the second phase, to find out the effectiveness of the Anchored Instructional approach pre test post test non-equivalent experimental method was used in pre test post test non equivalent group design. Pre test and post test are given to both experimental and control group. It is logical and systematic technique of checking tentative assumption under carefully controlled conditions. It is the most sophisticated, exact and powerful method for discovering and developing an organized body of knowledge. It is a type of research that directly attempts to influence a

particular variable, and can really test hypothesis about cause and effect relationship. The result of experimental research permit prediction and it provides for much control and therefore establishes a systematic and logical association between manipulated factors and observed effects. The methodology following in the study has been briefly discussed below

Preliminary Survey

The objective of the preliminary survey is to identify the existing level of emotional regulation for total sample and component based on gender and locale of secondary school students. The present study includes mixed method, stratified random sampling techniques was used for initial survey to find out the existing level of emotional regulation

Variables Selected for the Preliminary Survey

In this phase of the investigation a single criterion variable and two classificatory variables were selected. The criterion variable selected is Emotional Regulation and classificatory variables are Gender and Locale.

Sample Selected for the Preliminary Survey

The study was conducted on a sample of 400 secondary school students from VIIIth standard of six Schools. The study adopted stratified random sampling technique. Selected schools were both in Urban and Rural areas consisting different managements such as aided, unaided and government schools of Malappuram and Kozhikode District.

Table 2

Break-up of the Sample Selected for Preliminary Survey

Classificatory Variable	Sub groups	Number of Students	Total
Gender	Boys	188	400
	Girls	212	
Locale	Urban	149	400
	Rural	251	

Tools Used for the Preliminary Survey

The tool used for collection of data from the preliminary survey was Emotional Regulation Scale, which is developed and standardised by the investigator with the help of the supervising guide. The scale consist of 40 items based on the components of emotional regulation such as Self Blame, Acceptance, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal. Putting into Perspective, Catastrophizing, Others Blame. The detailed description of the steps involved in the development and standardisation of the tool is presented in the experimental phase of the study.

Statistical Techniques used for the Preliminary Survey

The statistical technique used for the preliminary survey was mean difference analysis, Standard Deviation, t test, Bonferroni's Test of Post-hoc comparison, Effect size Cohen's *d*.

Experiment

This study is intended to finding the "Effectiveness of Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science among Secondary School Students of Kerala"

Variables in the Experiment

The experiment phase of the present study consists of independent variable, dependent variables and control variables

Independent variable

The independent variable of the study is two levels of instructional strategies they are Anchored Instructional Approach and Existing Method of Teaching.

Anchored Instruction is developed on the basis of Anchored Instructional theory developed by Cognition and Technology Group at Vanderbilt.

The Existing method of teaching implies teaching methods adopted by Social Science teachers to transact current curriculum in secondary school.

Dependent variables

The dependent variables of the study are Emotional Regulation and Process Skills in Social Science

Control variables

The variables controlled for the present study were Non-Verbal Intelligence, Class room Environment and Socio Economic Status. The variables are controlled with a view to equating the two groups, namely experimental and control groups for the study.

Research Design Selected:

To realize the objectives of the study, investigator formulated Quasi-Experimental Design in which the experiment involves the effectiveness of Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science. **"**Experimental design is the blue print of the procedures that enables the researcher to test hypotheses by reaching valid conclusions about the relationship between independent and dependent variables" (Best & Kahn, 2008).

In the present study, Pre test - Post test Non equivalent group design was used. Among the students, one group is referred as the Experimental group and the other group as the Control group. The design is often used in class room experiments when experimental and control groups are such naturally assembled groups as intact classes, which may be similar (Best & Kahn, 2008)

Design of the Study:

To test the effectiveness of Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science of Secondary Schools of Kerala**,** Pre test - Post test Non equivalent Group Design was selected for the study (Best & Khan, 2017).

O1 X O2

O3 C O4

O1 O3 Pre-test

O2 O4 Post –tests

X Exposure of a group to experimental (treatment) variable

C Exposure of a group to control condition/ treatment

O Observation or test administered

Sample Selected for the Study

In the present study VIIIth standard students of secondary school of Kerala State were considered as the population. Since it is an experimental study the sample selected is small in order to avoid difficulty in conducting experiment. Therefore the investigator selected two intact class divisions of standard VIII from one school as sample. The investigator selected 90 students from two classes of one school as experimental and control group. The school Selected was Government Higher Secondary School, Kunnakkavu.

Table 3

Break-up of the Sample Selected for Experiment

Group	Name of School	Number of Students		Total
		Boys	Girls	
Experimental Group	GHSS, Kunnakkavu	20	25	45
Control Group	GHSS, Kunnakkavu	20	25	45
	Grand Total	40	50	90

Tools used in the Experiment

Following tools were used for collecting data in the experimental phase of present study

- Lesson transcript for Anchored Instructional Approach (Aruna & Haris, 2018)

- Lesson transcript for existing method of teaching (Aruna & Haris, 2018)
- Emotional Regulation Scale (Aruna & Haris, 2018)
- Test of Process Skills in Social Science (Aruna, Shiji & Surabi, 2014)

Tools used for equating the group

1. Class Room Environment Inventory (Aruna, Sureshan & Unnikrishnan 1998)
2. Raven's Progressive Matrices (Raven 1958)
3. Socio-economic status Scale (Aruna & Sumi 2010)

Detailed description of each tools are presented in following sections.

Investigator reviewed various literature related to Anchored Instructional Approach. From those literature selected appropriate components for the preparation of lesson transcript after consulting expert teachers, the investigator developed lesson transcript with the help of supervising teacher. This method of teaching was used for Experimental group.

Lesson Transcript for Anchored Instructional Approach

Lesson transcript according to Anchored Instructional Approach. Steps in the lesson transcripts are as follows:

Objectives of the lesson:

It means attainment of skills and knowledge after conducting the class. Its expected outcomes are improving intellectual abilities and emotional regulation. It includes the expected outcomes to be attained by the students by

teaching the particular lesson. It focuses on what will the students do to acquire further cognitive capacities, influence in affective domain and achievement in process skills. These objectives are stated under different headings such as Learning Objectives in terms of Content, Learning Objectives in Terms of Process Skills in Social Science, Learning Outcome in term of Emotional Regulation

Learning materials

It includes all types of teaching aids that support for teaching. Anchored Instruction Videos used mainly for instruction.

Previous knowledge

It means basic knowledge of the learner for assimilating new knowledge. Teacher transmit knowledge by connecting these previous back ground knowledge already in students.

Phase I: Choosing an appropriate anchor

Teacher introduces an annchor to student. Anchor has the capacity to maintain students interest and enrich enough support for solving problems. The anchor might be a segment of video, a strip, a major event, educational software so on.

Phase II: Developing shared expertise around the anchor;

Teacher facilitates a discussion of the anchor for familiarising and knowing more about the anchor and it will help the students to aware their responsibility in learning. Through this students develop shared expertise around the anchor.

Phase III: Expanding the anchor

Students expand the anchor by their own investigation. Students made attempt to find missing information and to find out the solution raised from the context.

Phase IV: Use knowledge as a tool

Students use knowledge as a tool for solving problem. Simultaneously instructor give some scaffolding according to the demand.

Phase V: Allowing student exploration

Students work on the context related to the anchor. Students are given the opportunity to extend their knowledge and relate it to other areas. In this phase students explore more and use reading greater depth about the subject, writing a report or an essay, or creating a multimedia report.

Phase VI: Sharing what was learned from the anchor instruction

In this phase students share what they learned from the context. It will make pride in their own work and provide insight into different ways of problem solving by their class mates.

Lesson Transcript of Existing Teaching Method

To developing lesson transcript according to existing teaching method at High School of Kerala for Social Science. Investigator consulted experts and working teachers of high school and identify the current method. They persuade constructivist approach integrated with Critical pedagogy. Even

though they are practising lecture method, demonstration and group activities as different techniques for transacting the lesson. Investigator also used text book and teachers hand book for the preparation of the lesson plan.

Objectives of the lesson:

These objectives are stated under different headings such as Learning Objectives in terms of Content, Learning Objectives in Terms of Process Skills in Social Science, Learning Outcome in term of Emotional Regulation.

Learning materials

It includes all types of teaching aids that support for teaching. Anchored Instruction Videos used mainly for instruction.

Previous knowledge

It means basic knowledge of the learner for assimilating new knowledge. Teacher transmit knowledge by connecting these previous back ground knowledge already in students.

After the preliminary part, the lesson plan contains different activities such as Introductory activity, Developing Activity, Concluding activity and finally Follow up Activity

Lesson plan based on Anchored Instruction and Existing Method of Teaching is given as Appendices.

Emotional Regulation Scale (Aruna &Haris, 2018)

Investigator developed and standardized emotional regulation scale along with supervising teacher to measure emotional regulation of High

School Students on the basis of following dimensions. This test was used in preliminary survey to estimate the existing level of Emotional Regulation of high school students. It also used in the experiment as pre test and post test to collect data on emotional regulation. The procedures adopted in the development and standardization of the scale is detailed following.

Planning and preparation of Emotional Regulation Scale

Investigator thoroughly reviewed the literature related to Emotional Regulation in order to clarify the concept. Investigator selected following dimensions of emotional regulation model of Nadia Garnefski and Vivian Kraaij. They are 1. Self blame 2. Acceptance 3. Rumination 4. Positive refocusing 5. Refocus on planning 6. Positive reappraisal 7. Putting into perspective 8. Catastrophizing 9. Other blame

1. Self Blame:

It refers to thoughts of putting the blame of what one has experienced on oneself

2. Acceptance:

It refers to an action of receiving oneself to what has happened.

3. Rumination:

Refers to thinking about the feelings and thoughts associated with the negative event

4. Positive refocusing

It refers to thinking about positive experiences instead of thinking about the actual event.

5. Refocus on planning

It refers to thinking about what steps to take and how to handle the negative event.

6. Positive reappraisal

It refers to thoughts of giving the event a positive meaning in terms of personal growth

7. Putting into perspective

It refers to down grading the importance of the event.

8. Catastrophizing

It refers to thoughts of explicitly emphasizing the terror of what one has experienced.

9. Others blame

It refers to thoughts of putting the blame of what one have experienced on the environment of another person (Garnefski & Kraaij, 2006).

Based on the dimensions items were written to prepare the draft to form emotional regulation scale. The draft Emotional Regulation Scale consist of 51 statements pertaining to the 9 possible components.

The distribution of statements in the draft emotional regulation scale is presented in the table below.

Table 4

Distribution of Statements in the Draft Emotional Regulation Scale

Sl. No.	Components	Item No Total Item No.
Self Blame	1, 2, 3, 4, 5, 6	6
Acceptance	7, 8, 9, 10, 11, 12	6
Rumination	13, 14, 15, 16, 17	5
Positive Refocusing	18, 19, 20, 21, 22, 23	6
Refocus on Planning	24, 25, 26, 27, 28	5
Positive reappraisal	29, 30, 31, 32, 33	5
Putting into perspective	34, 35, 36, 37, 38, 39	6
Catastrophizing	40, 41, 42, 43, 44, 45	6
Others Blame	46, 47, 48, 49, 50, 51	6

Mode of responding

There are fifty one items in the scale. For each item there were five answers namely A) strongly agree, B) agree, C) undecided, D) disagree and E) strongly disagree. The subject was asked to put a tick mark in the appropriate column

Scoring procedure

Scoring procedure of this scale is given below

Positive		Negative	
A) Strongly Agree	: 5	A) Strongly agree	: 1
B) Agree	: 4	B) Agree	: 2
C) Undecided	: 3	C) Undecided	: 3
D) Disagree	: 2	D) Disagree	: 4
E) Strongly Disagree	: 1	E) Strongly Disagree	: 5

The summated scores of all the 51 statements provide emotional regulation of students. Thus the maximum possible score of all the 51 items would be 255 and minimum possible score would be 51.

Try out of the scale

The draft scale consist of 51 items which were tried out on a sample of 400 students of standard VIII. Each response was collected and scored separately.

Item analysis

Item analysis was carried out by the method suggested by Edward in 1969. The items were selected for the final scale on the basis of the Discrimination Power of each Item. Discrimination Power of item denotes the efficiency of the statements to discriminate significantly between subjects of opposing views.

The responses were scored using scoring scheme mentioned above. The scores obtained for each items and the total score for each individual was marked separately. The response sheets were arranged according to the descending order of the scores. Then the top 27 percentage and bottom 27 percentage respondents were taken which represented the high and low groups. The t value of each statement was calculated using the formula.

$$t = \frac{\overline{X}_H - \overline{X}_L}{\sqrt{\frac{\sum\left(X_H - \overline{X}_H\right)^2 + \sum\left(X_L - \overline{X}_L\right)^2}{N(N-1)}}}$$ (Edward 1957)

Where

$\overline{X}_H$ = the mean response score on a given statement for the high group

$\overline{X}_L$ = the mean response score on a given statement for the low group

N = Size of high group and low group

t-values were calculated for each item. Item with t values greater than 1.96 were selected for the final test

The details of item analysis of draft Emotional Regulation scale is presented in the table below

Table 5

Details of Item Analysis of draft Emotional Regulation Scale

Sl. No.	t vale	Sl. No.	t vale	Sl. No.	t vale
1	2.398	18	3.523	35	3.507
2	2.703	19	2.651	36	0.690*
3.	2.602	20	0.579*	37	2.649
4.	3.602	21	2.157	38	2.648
5	-0.088*	22	3.017	39	4.118
6	-0.577*	23	2.503	40	2.230
7	2.821	24	2.738	41	1.999
8	2.480	25	2.493	42	2.850
9	2.993	26	2.253	43	0.103*
10	2.538	27	3.995	44	3.231
11	0.523*	28	0.523*	45	2.392
12	4.210	29	3.366	46	4.730
13	2.079	30	3.507	47	5.660
14	2.971	31	3.826	48	2.645
15	3.437	32	0.189*	49	4.462
16	0.871*	33	3.651	50	0.966*
17	2.911	34	3.697	51	0.965*

* indicates t values of deleted items

Reliability.

Reliability is the consistency of a test having the same result in measuring whatever it does measure (Remmu, 1967 & Gaye, 1961). It stands

for freedom from errors of measurement. Errors in the measurement will disturb of consistency of measurement.

Reliability of the Emotional regulation scale was found by test re test method. For this tool was re –administered to a sample of 40 students after an interval of one month. The value of test retest reliability is 0.72. So it is evident that the present scale on emotional regulation is reliable

Validity.

According to Best and Kahn (1995) "validity is that quality of data gathering or procedure that enable it to measure what it is supposed to measure".

The present scale of emotional regulation has been validated by the method of construct validity and face validity. The method followed in the construction of the scale, criteria considered for writing of statements, mode of selection of dimension of the scale, all show that the scale has construct validity. The Malayalam version of the final Scale of emotional regulation is given in appendices. The items were further confirmed after discussing with subject specialists. As positive judgement was given by the experts, the tool ensured face validity.

Test of Process Skills in Social Science

Investigator adopt test of process skills in Social Science by using selected process skills in social science. Test items comprise only multiple choice questions. Its aim is to evaluate the expected outcomes based on these process skills and to measure various skills involved in the social science

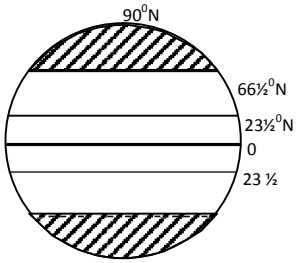
process. The tool was constructed on the basis of secondary school curriculum which gives more priority to process skills. The tool developed with the support of text book and reference books.

Investigator used Michaelis (1980) classification skills of Social Science for preparing questions based on different skills in social science. Among the skills eight skills in social science were selected Classification, Observation, Locating Prediction, Synthesis, Evaluation, Interpretation and Measuring.

Observe

Using the senses to gather information about an object or event based on provisionally gathered data or information. It is a process of meaningful watching for perceiving or focus attention on an object or activity with an intention. It is an internalizing process for information collection. There are many types of observation such as direct and indirect, direct observation is the process of receiving information through sensation. Such as Seeing, Hearing, touching, tasting, smelling. Indirect observation consist of collecting data from secondary sources.

Eg: 13. The following picture shows the various pressure belt zones. Observe the picture and find which one of the following is shaded part of the picture.



A) Temperature zone B) Polar Zone

C) Equatorial zone D) None of these

Measure

By using standards or non-standards measure to describe the dimensions based on properties or criteria. It includes the capacity in quantifying physical variables through direct and indirect measurement, in calculating the direction and magnitude of variation in an illusion, and in explaining that differences and exist in perceptions of the dimensions.

Eg. 2) Find out the excessive of sulphur dioxide above permissible level

A. 18.7g/m3 B.14.2 g/m3

C.16.2 g/m3 D.11.7g/m3

Classify

Grouping or ordering objects or events into categories based on properties or criteria. It is an ability to comprehend the way of arranging and categorising each other. Classification make on the basis of criteria at different level , sometime from the general to the very specific

Eg. 5. Look at the schedule and to find out the list of various themes represented”

i) Physical map explain, states and towns

ii) Physical map represents physiography

iii) Political map includes the peculiarities of the nation

iv) Boundaries, states and capital include in political map

A) i, iii, iv B) i, ii, iii C)ii,iii,iv D) i,ii,iv

Predict

State the outcome of a future event based on a pattern of evidence. It is different from mere guess because it used information systematically. It is the outcome of systematic investigation through which investigator forecasting the outcome of a specific future event.

*Eg.*1. What will be the result in future if man continues his deforestation process for various purpose.

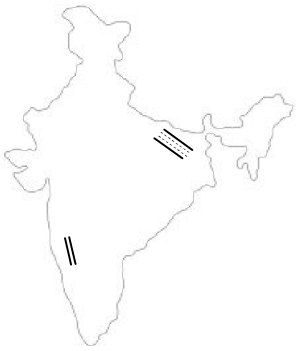
A) Rain increases B) Rain decreases

C) Temperature decreases D) No change will occur

Interpret

Organize data and drawing conclusion for it. It is the action of explaining or way of explaining the meaning of something

Eg. 9. What is the marked portion represents in the following map?



A) Railway line, Tarred Road

B) Tarred Road, River

C) Railway line, River

D) Village Road, River

Locate

It is the ability to find out place and other signs in maps and globes. Though this a student achieves a clear understanding of direction on maps and globes. They can find location of a place in relation to other places or surface features

Eg. 22. The following map shows Harappan civilization, City Lothal. Now in which state the place is located

A. Gujarat B. Maharastra

C. Rajasthan D. Madhyapradesh

Synthesise

Make a whole by bringing parts together, it is for integrating and creating a new product. Parts or elements are put together to form a unified structure around a key concept, theme, question, principle.

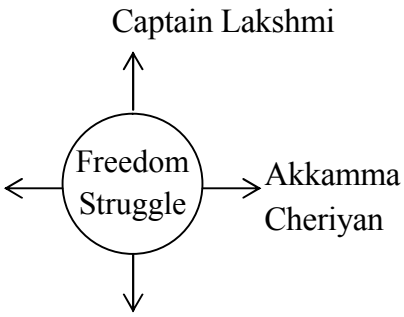
Eg. 18. Complete the following word sun

A) Anna chandi, Akkamma Cheriyan

B) Sister nivedhitha, Sarojini Naidu

C) Madam cama, A.V.Kuttimalu Amma

D) Indira Gandhi, Fathima Beevi



Evaluate

Evaluation is making a judgement of merit based on defined criteria. It is more than rising an opinion because it has a standard or criteria for judgement. It is a judgement of effectiveness on social utility or desirability of a product, process or program in terms of carefully defined or agreed upon objective or values.

Eg. 12**.** Volcanic eruptions are very big threats to human life, but people prefer these places for living, why?

A) They do not fear volcanic eruptions B) Availability of rich minerals

C) Other places are not allowed for living D) Less temperature places.

Table 6

Design Following Weightage to Skills

Sl. No.	Skills	No. of Questions	Marks	%
1.	Classify	4	4	12.50
2.	Observe	4	4	12.50
3.	Locate	4	4	12.50
4.	Predict	4	4	12.50
5.	Synthesise	4	4	12.50
6.	Evaluate	4	4	12.50
7.	Interpret	4	4	12.50
8.	Measure	4	4	12.50
	Total	64	64	100

Item analysis

Procedure suggested by Ebel (1972) was used in test of Process Skills in Social Science for item analysis.

Difficulty index

It is calculated with the formula $\frac{U+L}{2\ N}$

Where, U = Number of correct responses in the upper group

L = Number of correct responses in the lower group

N= Number of pupils in any group

Discrimination power

The discrimination power of an item means quality of an item at which it discriminate between pupils with high and low knowledge. The discrimination power of each item was found out by using the formula.

Difficulty Index : $\frac{(U-L)}{N}$

Here, U = Number of correct responses in the upper group

L = Number of correct responses in the lower group

N = Number of pupils in any group

Selection of items

Difficulty index above 0.3 was readily selected for the selection of items. Difficulty value below 0.3 was rejected and other items which have difficulty index between 0.3 and 0.8 were selected as reasonably good. Based on this 32 items were selected for final test.

Both Malayalam and English Version of final test of process skills in social science and response sheet and scoring key are given in Appendices

Validity and reliability

It is an essential factor for effectiveness of any investigation. Similarly these are needed for any instrument for proving its genuineness.

Validity

The most significant quality of a test is its ability to measure what it is intended to measure, the arrangement of objectives for which it is designed. Best (1995) "The validity is that quality of data gathering instrument or procedure that enable it to determine what it was designed to determine".

In order to ensure the validity of the present test the investigator used the method of content validity. It is based on careful examination of course

test books, syllabus, objectives and the judgements of subjects matters specialists. The item of this tool is based on process skills in social science. So it will deserve content validity

Reliability

According to Best (2017) Reliability is the degree of consistency that the instrument or procedure demonstrates: Whatever it is measuring, it does so consistently. Crow expressed "By reliability it is meant the extent of which or the accuracy with which a test measures what it has been constructed to measure".

Reliability coefficient can be calculated with different methods such as a test-retest method, split half method, equivalent or parallel form method. For this tool reliability established by test retest method. The reliability co-efficient is calculated using the formula

$$\text{'r'} = \frac{N\sum XY - \sum X \sum Y}{\left[N\sum X^2 - \left(\sum X\right)^2\right]\left[N\sum Y^2 - \left(\sum Y\right)^2\right]}$$

Where 'r'= coefficient of correlation

X = scores obtained in first test

Y = scores obtained in second test

N = Total number of students

The obtained reliability coefficient of the test is 0.64**.**

Tools used for Equating the Group

1. Class Room Environment Inventory (Aruna, Sureshan & Unnikrishnan 1998)

This instrument is intended to measure the class room environment was developed and standardized by Aruna, Sureshan & Unnikrishnan. It consists of total 47 items. The class room environment Inventory was mainly based on the dimensions in the Classroom Environment Instrument developed by Fraser et al (1982). Various dimensions of the instrument are given below:

Material environment

Availability of enough materials such as books, equipments, furniture space and lighting includes in this dimension

Cohesiveness

This is all about the mutual friendship and cordial relationship between students. It is to reveal how much interdependence and helpful mind exist among students.

Task Orientation

To understand the how the activities are organized including the organization of students, space, time and instruction

Innovation

This dimension related to innovative plans of teacher, variety of activities and methods and encourage students creativity and involvement in classroom planning**.**

Participation

How much encouraged from the teachers side for students participation in activities such as competitions and club activities

Teacher support

To understand the teachers scaffolding in students demand and needs. The items show teachers are how much friendly towards students and at what extent they are interested.

Personalization

It express opportunities for individual students to interact with the teacher and concern for the personal welfare and social growth of individual.

Independence

It emphases the freedom of students expression of opinion and make decisions similarly it also include how much independence students getting in their learning and behaviour

Order and organizations

It is related to overall organization of classroom so it emphases on students behaving in an orderly, quite and polite manner.

Teacher control

It shows the maintenance of descipline by the teacher. It includes rules and enforcement of rules and regulation.

Friction

The students fear and tension how extent prevail in class room also assessed by this item.

Competition

It shows the extent of competition and places of students competition for grade and recognition

The validity of the inventory was estimated by criterion related technique and was found to be 0.536. The inventory was revalidated on 2018. For finding the reliability of the inventory, split half method was adopted and was found to be 0.589. Yes or No options were given as the response and score 1 for Yes and 0 for No Response (A copy of the Malayalam version of Classroom Environment Inventory and its response sheet were given in Appendix

2. Raven's Progressive Matrices (Raven 1958)

Standard Progressive Matrices Test (Raven, 1958) was used for measure the Non Verbal intelligence of the homogeneity of the students. It consists of 60 items in five subtests (A, B, C, D & E). In each subtest there are 12 items and in each item a part of the given geometrical design is missing. Test taking individual has to select the one that most logically fits the missing part from six or eight options provided. Maximum possible score is 60 and score of a person taking the test is the total number of items answered correctly. The total score obtained by a student in this test is treated as Non-verbal Intelligence score. As reported by Raven, the validity estimated varied from .50 to .80 and the reliability coefficients of the test varied from .80 to .90.

A copy of the response sheet and scoring key of Standard Progressive Matrices Test are given in Appendices

3. Socio-Economic Status Scale (Aruna & Sumi 2010)

In this study for equating the group socio economic status Scale developed by Aruna & Sumi 2010) was used. It is an expanded form of general data sheet.

The general data sheet is divided into five sections. The first section consist information about the subjects regarding the name of the pupil, age sex, locality of the school. Place of residence. The second part calls for information regarding the level of education of parents, siblings and other occupants of the family. The third section is used to elicit information regarding the type of occupation of the family members. The details about the income of the family member are collected through the forth section. The investigator depended on the education, occupation, and income of mother and father or of the guardian to fix up the socio economic status scores of the family.

Statistical Techniques Used

The following statistical techniques were used in the present study to analyse the collected data

Basic Descriptive Statistics

Preliminary analysis was done to find out the nature of distribution of variable for the selected sample in preliminary survey and experiment. For

this purpose, mean, median, mode, standard deviation, skewness and kurtosis corresponding to each variable was calculated for total samples and relevant sub samples.

Standardised Skewness and Kurtosis

Indices of normality was calculated by standardised skewness and kurtosis. These indices are obtained by dividing the values of skewness and kurtosis by their respective standard errors. Normality of data is determined by using the following criteria. For small samples ($n<50$) if the absolute values of the indices are greater than 1.96, then the distribution of the sample is not normal ($p<.05$) For medium sized samples ($50<n<300$) if the absolute values of these indices are greater than 3.29, then the distribution of the sample is not normal ($p<.05$). For sample sizes greater than 300, absolute values of sknewness and kurtosis are considered without considering their standardized values. If either the absolute skewness value is greater than 2 or the absolute value of kurtosis is greater than 4, then the distribution is not normal (Kim, 2013)

Test of Significance of Difference between Means

Test of significance of difference between means was used to compare the relevant variables of the Experimental and control groups.

Cohen's *d* is the standardized mean difference between two independent sample. To interpret this effect size the bench mark proposed by

Cohen (1988) is 0.2 indicate small effect, 0.5 indicate medium effect and 0.8 indicate large effect.

ANCOVA

Analysis of co-variance is a statistical technique used to control or adjust the effects of one or more uncontrolled variables and permit thereby a valued evaluation of the effectiveness of the experiment (Ferguson, 1996). This technique is applied when there are one or more correlated variables existed with the dependent variable.

The statistical technique represents an extension of Analysis of Variance to allow for the correlation between initial and final scores. Co-variance analysis is especially useful to control statistically the effects of one or more co-variates. Through co-variance analysis it is possible to effect adjustments in final terminal scores which allow for difference in same initial variable.

Since the experiment was carried out using non equated intact class groups, to statistically control for the initial differences between experimental and control groups, if any in terms of Pre-Process skills in social Science, Pre Emotional Regulation, Non Verbal Intelligence, Classroom Environment, Socio Economic Status, one way ANCOVA was used. This helped in better comparison of the two groups to study the relative effectiveness of Anchored Instruction on Emotional Regulation and Process Skills in Social Science.

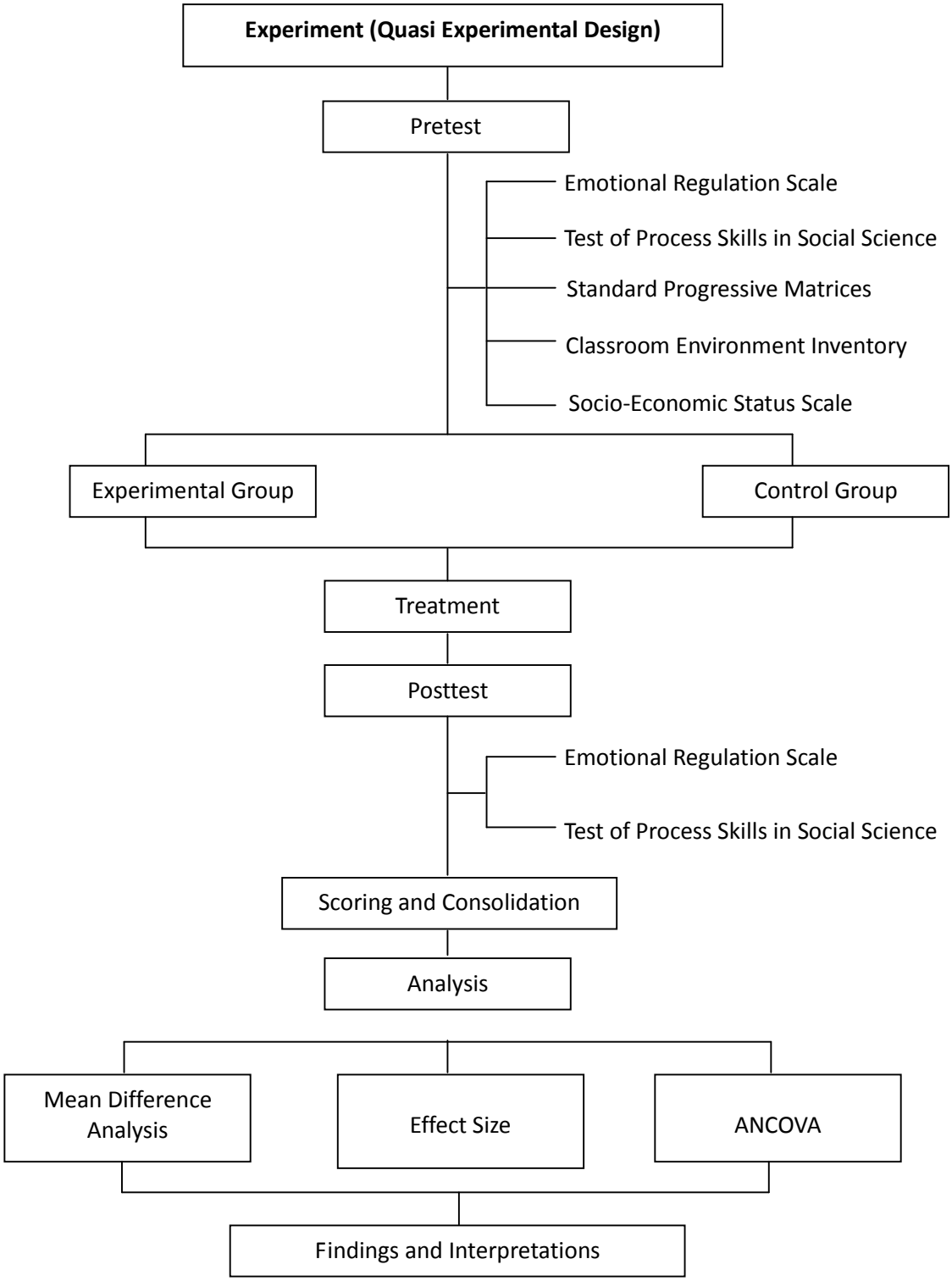


Figure 6. Flowchart showing the summary of the execution of experiment

CHAPTER IV

ANALYSIS AND INTERPRETATION

- *Important Statistical Constants of the Variables*
- *Mean Difference Analysis*
- *Analysis of Effect Size*
- *Analysis of Co-variance of the Dependent Variable*

ANALYSIS AND INTERPRETATION

The purpose of the present study was to design and develop an instructional method based on Anchored Instruction and to test its effectiveness on emotional regulation and process skills in the social science of secondary school students. The study was also intended to analyze the significant difference in emotional regulation and its components. The investigator also intended to analyze process skills in social science and its components in pretest, posttest and gain scores. The experimental group was taught by the Anchored Instructional approach and the control group was taught by the existing method of teaching. The data collected from the target group was analyzed by using the following statistical techniques, such as Basic Descriptive Statistics, Test of Significance of Difference between means and ANCOVA. The results obtained from the analysis have been presented in two parts. In the first part, analysis of the data collected from a preliminary survey and in the second part, analysis of the data from the experiment is presented

Analysis of data from the preliminary survey is described under the following headings

- Estimation of Existing Level of Emotional Regulation (component-wise) of secondary school students based on the subsample of gender
- Estimation of Existing Level of Emotional Regulation component-wise of secondary school students based on the subsample of Locale

Important Statistical Constants of the Variables

- Pretest score of the variable for the experimental group
- Pretest score of the variable for the control group
- Posttest score of the variable for the experimental group
- Posttest score of the variable for the control group

Mean Difference Analysis

- Comparison of mean pretest scores of Emotional regulation and Process Skills in Social Science of Experimental and Control group.
- Comparison of mean pretest and posttest scores of Emotional regulation and Process Skills in Social Science of Experimental group and Control group.
- Comparison of mean posttest score of Emotional Regulation and Process Skills in Social Science of Experimental group and Control group.
- Comparison of the mean gain score of Emotional Regulation and Process Skills in Social Science in Experimental and control group

Analysis of Effect Size

- The effect size of mean pretest and posttest scores of Emotional regulation and Process Skills in Social Science of Experimental group and Control group
- The effect size of the mean posttest score of Emotional Regulation and Process Skills in Social Science of Experimental group and Control group
- The effect size of the mean gain score of Emotional Regulation and Process Skills in Social Science in Experimental and control group

Analysis of Co-variance of the Dependent Variable

- Comparison of adjusted mean scores of Emotional regulation of experimental and control group by considering pretest scores of Process Skills in Social Science, Nonverbal Intelligence, Classroom Environment and Socio-Economic Status as covariates
- Comparison of adjusted mean scores of Process Skills in Social Science of the experimental and control group by considering pretest scores of Emotional Regulation, Nonverbal Intelligence, Classroom Environment and Socio-Economic Status as covariates.

Objectives of the Study

1. To find out the existing level of emotional regulation of secondary school students in total sample and subsamples of gender and locale
2. To compare the mean pretest scores, posttests scores and gain scores of the experimental group and control group in Emotional Regulation in total sample and component-wise
3. To compare the mean pretest scores, posttests scores and gain scores of the experimental group and control group in Process Skills in Social Science in the total sample and component-wise.
4. To compare the effectiveness of Anchored Instructional Approach with that of the existing method of teaching on Emotional Regulation and process skills in social science

Hypotheses of the Study

1. There will be no significant difference in the mean scores of existing level of Emotional Regulation of secondary school students in
   a) Total sample
   b) Sub sample
   i. Gender (Boys and Girls)
   ii. Locale (Rural and Urban)
2. There will be no significant difference in the pre-test mean scores of Emotional Regulation of the Experimental and Control groups for
   a) Total Sample
   b) Component wise

   I. Self Blame
   II. Acceptance
   III. Rumination
   IV. Positive Refocusing
   V. Refocus on Planning
   VI. Positive Reappraisal
   VII. Putting into perspective
   VIII. Catastrophizing
   IX. Others Blame

3. There will be a significant difference in the mean pre-test and post-test scores of Emotional Regulation of the Experimental group for
   a) Total Sample

b) Component wise

I. Self Blame

II. Acceptance

III. Rumination

IV. Positive Refocusing

V. Refocus on Planning

VI. Positive Reappraisal

VII. Putting into perspective

VIII. Catastrophizing

IX. Others Blame

4. There will be a significant difference in the mean pre-test and post-test scores of Emotional Regulation of the Control groups for

a) Total Sample

b) Component wise

I) Self Blame

II) Acceptance

III) Rumination

IV) Positive Refocusing

V) Refocus on Planning

VI) Positive Reappraisal

VII) Putting into perspective

VIII) Catastrophizing

IX) Others Blame

5. There will be a significant difference in the mean post-test scores of Emotional Regulation of the Experimental and Control groups for
   a) Total Sample
   b) Component wise

   I. Self Blame

   II. Acceptance

   III. Rumination

   IV. Positive Refocusing

   V. Refocus on Planning

   VI. Positive Reappraisal

   VII. Putting into perspective

   VIII. Catastrophizing

   IX. Others Blame

6. There will be a significant difference in the mean gain scores of Emotional Regulation of the Experimental and Control groups for
   a) Total Sample
   b) Component wise

      I. Self Blame

      II. Acceptance

      III. Rumination

      IV. Positive Refocusing

      V. Refocus on Planning

      VI. Positive Reappraisal

      VII. Putting into perspective

VIII. Catastrophizing

IX. Others Blame

7. There will be no significant difference in the pre-test mean scores of Process Skills in Social Science of the Experimental and Control groups for

   a) Total Sample

   b) Component wise

      I. Classify

      II. Observe

      III. Locate

      IV. Predict

      V. Synthesis

      VI. Evaluate

      VII. Interpret

      VIII. Measure

8. There will be a significant difference in the mean pre-test and post-test scores of Process Skills in Social Science of the Experimental group for

   a) Total Sample

   b) Component wise

      I. Classify

      II. Observe

      III. Locate

      IV. Predict

V. Synthesis

VI. Evaluate

VII. Interpret

VIII. Measure

9. There will be a significant difference in the mean pre-test and post-test scores of Process Skills in Social Science of Control groups for

a) Total Sample

b) Component wise

I. Classify

II. Observe

III. Locate

IV. Predict

V. Synthesis

VI. Evaluate

VII. Interpret

VIII. Measure

10. There will be a significant difference in the mean post-test scores of Process Skills in Social Science of the Experimental and Control groups for

a) Total Sample

b) Component wise

I. Classify

II. Observe

III. Locate

IV. Predict

V. Synthesis

VI. Evaluate

VII. Interpret

VIII. Measure

11. There will be a significant difference in mean gain scores of Process Skills in Social Science of the Experimental and Control groups for

a) Total Sample

b) Component wise

I. Classify

II. Observe

III. Locate

IV. Predict

V. Synthesis

VI. Evaluate

VII. Interpret

VIII. Measure

12. There will be a significant difference in the adjusted mean scores of Emotional Regulation of Experimental and Control groups by considering pre Process Skills in Social Science, Non-Verbal Intelligence, Classroom Environment, and Socio-Economic Status as Covariates for Total Sample

13. There will be a significant difference in the adjusted mean scores of Process Skills in Social Science of Experimental and Control groups by considering pre Emotional Regulation, Non-Verbal Intelligence, Classroom Environment, and Socio-Economic Status as Covariates for Total Sample.
14. Anchored Instructional Approach has significant effect over existing method of teaching on Emotional Regulation and Process Skills in Social Science.

Variables Selected for the Study

Independent variable

There are two levels of an independent variable. They are the Anchored Instruction and Existing Method of Teaching.

Dependent variables

I. Emotional Regulation (Total)

II. Emotional Regulation (component-wise) viz.,

1) Self Blame, 2) Acceptance

3) Rumination 4) Positive Refocusing

5) Refocus on Planning 6) Positive Reappraisal

7) Putting into perspective 8) Catastrophizing

9) Others Blame

I. Process Skills in Social Science (Total)

II. Process Skills in Social Science (component-wise)

1) Classify 2) Observe

3) Locate 4) Predict

5) Synthesize 6) Evaluate

7) Interpret 8) Measure

Control Variables

The variables controlled for the present study were the initial status of Students regarding Non-Verbal Intelligence, Classroom Environment, and Socio-Economic Status. The variables are controlled to equate the two groups. Namely the experimental and control group for the study. The mean, median and mode of all variables coincide.

Analysis of Data from the Preliminary Survey

The objective of the preliminary survey is to find out a significant difference between the mean scores of emotional regulation for the total sample and component-wise based on gender and locale of secondary school students

Design of the Preliminary Survey

In this phase, the investigator collected data using the survey method to identify the significant difference in the mean scores of emotional regulation and component-wise of high school students for the subsamples based on gender and locale of secondary school students.

Sample Selected for the Preliminary Survey

The study was conducted on a sample of 400 secondary school students from the 8^{th} standard of six Schools. The study adopted the stratified random sampling technique. Selected schools were both in Urban and Rural areas of Malappuram and Kozhikode Districts.

Tools used for the Preliminary Survey

The tool used for the preliminary survey was the Emotional Regulation scale, which is developed and standardized by the investigator with the help of a supervising guide. The scale consists of 40 items based on the components of emotional regulation such as Self Blame, Acceptance, Rumination, Positive refocusing, Refocus on planning, Positive reappraisal. Putting into perspective, Catastrophizing and Others blame

Statistical Techniques used for the Preliminary Survey

The statistical technique used for the preliminary survey was mean, median, mode, Standard Deviation, Skewness and Kurtosis, two tailed test of significance of difference between means was calculated.

Estimation of Existing Level of Emotional Regulation of Secondary School Students

In this section, the existing level of emotional regulation of secondary school students for the total sample and subsamples based on gender and locale of schools were found out the Emotional Regulation Scale (Aruna & Haris, 2018) was the tool used for the purpose. This scale was administered on a sample of 400 secondary school students by giving due representation to the gender, locale of school. The responses were collected, scored, tabulated and then the mean, median, mode, standard deviation, Skewness, and Kurtosis were calculated.

The details of the statistical constants of Emotional Regulation are given in table 7.

Table 7

Statistical Constants of Emotional Regulation Scores of Secondary School Students to the Total Samples and Subsamples based on Gender and Locale

Sample	Number	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Total	400	142.72	143.00	137.00	14.27	-0.18	0.20
Boys	188	142.81	145.00	147.00	15.94	-0.24	0.11
Girls	212	142.64	142.00	137.00	12.65	-0.06	-0.06
Urban	149	143.93	142.00	132.00	12.92	0.40	0.16
Rural	251	142.00	144.00	148.00	15.00	-0.35	0.04

Table No. 7 reveals that the Mean, median and mode of all the groups were all most similar for the total sample of secondary school students. The standard deviation of gender, locale reveals that the scores are somewhat dispersed from the central value. All subsamples were negatively skewed except subsamples of urban. The Kurtosis of aided and unaided school students is higher than the normal value 0.263 distribution was platykurtic. The remaining groups were leptokurtic as the kurtosis values were less than the normal value.

Mean Difference Analysis

Comparison of the Mean Scores of Emotional Regulation of Secondary School Students belongs to Different Subgroups

In this section, the arithmetic mean and standard deviation of the subgroups based on gender and locale of schools were found out and then

comparable groups were subjected to the test of significance of the difference between means for large independent groups. Details are given below

Comparison of the mean scores of the emotional regulation of Boys and Girls in Total Sample

Boys and girls were compared on their Emotion Regulation for the total sample, in this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 8.

Table 8

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation total for the sample of Boys and Girls

Variable	Group	N	Mean	SD	t value	Level of significance
Total	Boys	188	142.81	15.94	.120	N.S
	Girls	212	142.64	12.65		

N.S =Not Significant

Table No. 8 indicates that the mean scores of boys and girls almost the same in the Total sample. As the critical ratio estimated for the Emotional Regulation variable is less than the minimum values required for significance at 0.05 level (t =.120). This shows that there is no significant difference in Emotional Regulation between the two gender classes.

The performance of boys and girls on Emotional Regulation for the total sample was examined graphically. The graphical representation of mean

scores of Emotional Regulation (total sample) of Boys and Girls were shown in figure 7.

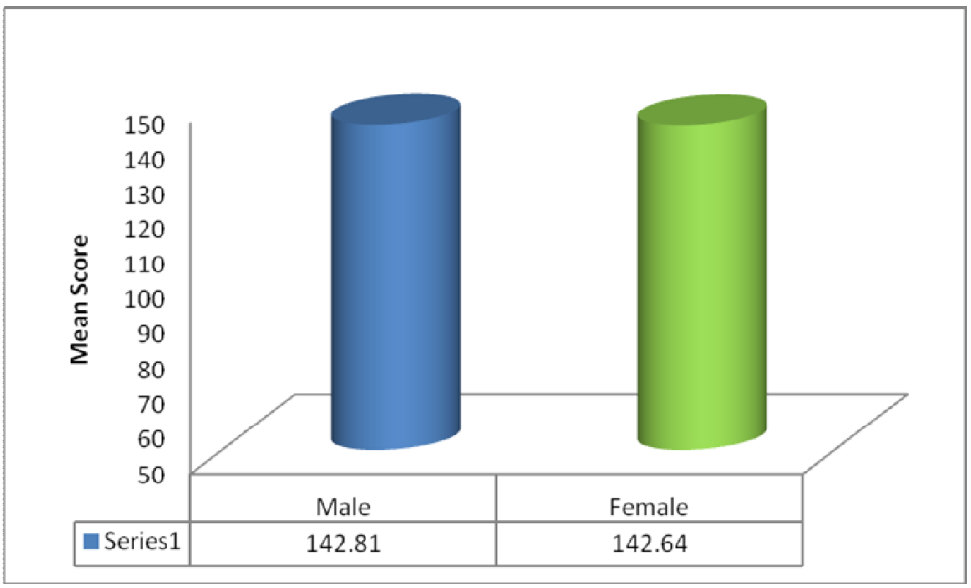


Figure 7. The graphical representation of mean scores of Emotional Regulation (total sample) of boys and girls

The graphical representation shows that boys and girls are equal in their Emotional Regulation.

Comparison of the mean scores for the Component of Emotional Regulation (self Blame) of secondary school students based on gender; Boys and Girls

Boys and girls were compared on self-blame, in this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 9.

Table 9

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Self Blame) for the sample of Boys and Girls

Variable	Group	N	Mean	SD	t value	Level of significance
Self Blame	Boys	188	11.36	2.28	.518	N.S
	Girls	212	11.48	2.15		

N.S =Not Significant

Table No. 9 indicates that the mean scores of boys and girls almost the same in the (self-blame) component of Emotional Regulation. As the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t =.518). This shows that there is no significant difference in self-blame values between the two gender classes.

The performance of boys and girls on Self blame was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Self Blame) for the sample of Boys and Girls were shown in figure 8

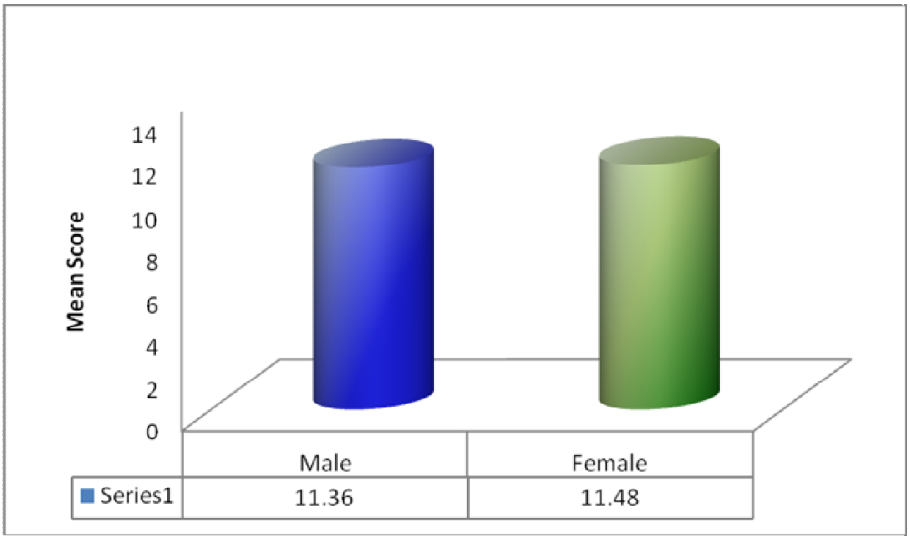


Figure 8. Graphical representation of mean scores of component of emotional regulation (self blame) for the sample of boys and girls

From the graph it is observed that boys and girls are same in the component of Emotional Regulation (Self Blame).

Comparison of the mean scores for the component of Emotional Regulation (Acceptance) of secondary school students based on gender; Boys and Girls.

Boys and girls were compared on their Acceptance for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 10

Table 10

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Acceptance) for the sample of Boys and Girls

Variable	Group	N	Mean	SD	t value	Level of significance
Acceptance	Boys	188	18.862	2.851	.162	N.S
	Girls	212	18.816	2.770		

N.S =Not Significant

Table No. 10 indicates that the mean scores of boys and girls almost the same in the (Acceptance) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t=.162). This shows that there is no significant difference in Acceptance values between the two gender classes.

The performance of boys and girls in Acceptance was examined graphically. The graphical representation of mean scores of Component of

Emotional Regulation (Acceptance) for the sample of Boys and Girls were shown in figure 9.

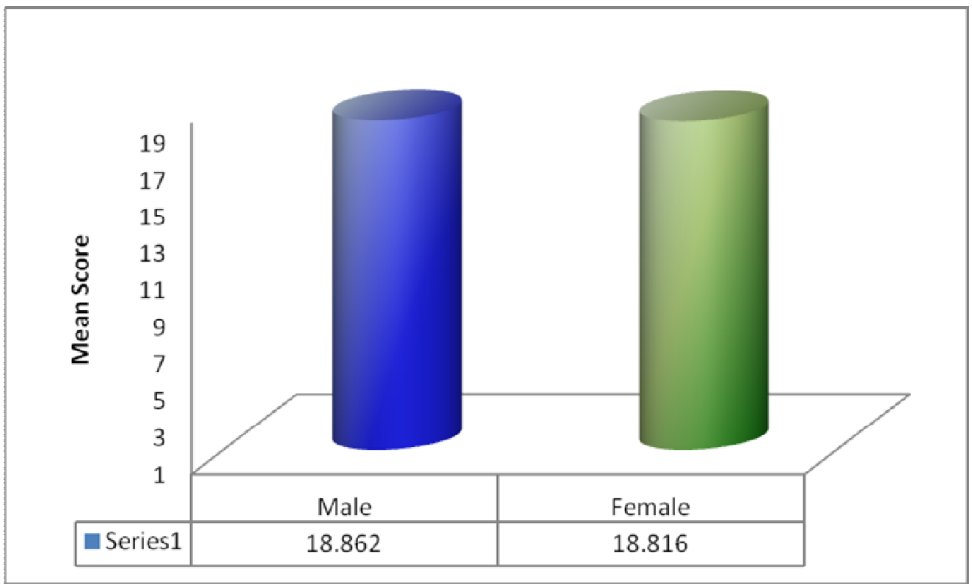


Figure 9. Graphical representation of mean scores of component of emotional regulation (Acceptance) for the sample of boys and girls

Graphical representation also evidenced the equal representation of boys and girls in the component of Emotional Regulation (Acceptance).

Comparison of the mean scores for the component of Emotional Regulation (Rumination) of secondary school students based on gender; Boys and Girls

Boys and girls were compared on their Rumination for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 11.

Table 11

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Rumination) for the sample of Boys and Girls

Variable	Group	N	Mean	SD	t value	Level of significance
Rumination	Boys	188	13.723	2.630	.794	N.S
	Girls	212	13.533	2.164		

N.S =Not Significant

Table No. 11 indicates that the mean scores of boys and girls almost the same in the (Rumination) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t =.794). This shows that there is no significant difference in Rumination values between the two gender classes.

The performance of boys and girls in Rumination was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Rumination) for the sample of Boys and Girls were shown in figure 10.

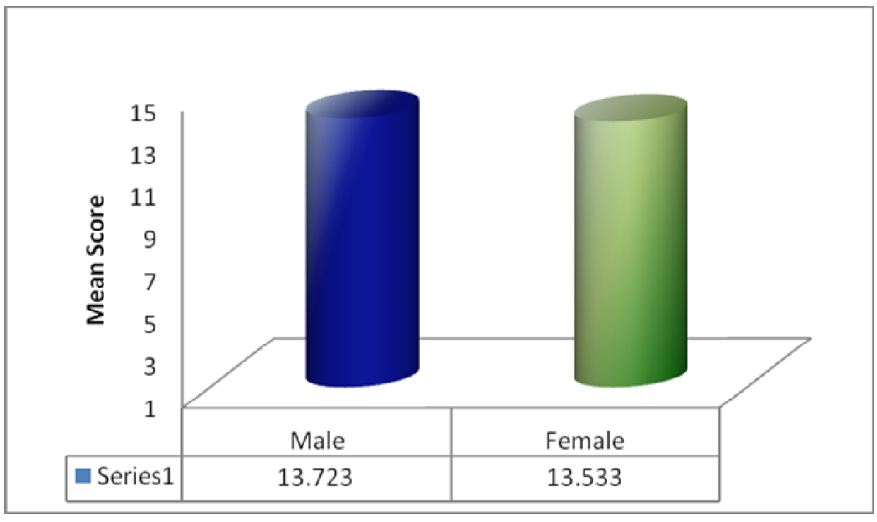


Figure 10. Graphical representation of mean scores of component of emotional regulation (rumination) for the sample of boys and girls

The graph indicates that boys and girls are equal in the components of Emotional Regulation (Rumination).

Comparison of the mean scores for the component of Emotional Regulation (Positive Refocusing) of secondary school students based on gender; Boys and Girls.

Boys and girls were compared on their Positive Refocusing for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 12

Table 12

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (positive refocusing) for the sample of Male and Female.

Variable	Group	N	Mean	SD	t value	Level of significance
Positive refocusing	Boys	188	16.47	3.91	8.87**	0.01
	Girls	212	14.712	3.29		

**P <0.01

Table No.12 indicates that the mean scores of boys and girls differ significantly in the (Positive Refocusing) component of Emotional Regulation as the critical ratio estimated for the variable is greater than the minimum values required for significance at 0.01 level (t =8.87, P<0.01). This shows that there is a significant difference in positive refocusing values between the two gender classes. High mean scores were associated with Boys suggesting the superiority of boys over girls in positive refocusing

The performance of boys and girls in Positive Refocusing was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Positive Refocusing) for the sample of Boys and Girls were shown in figure 11.

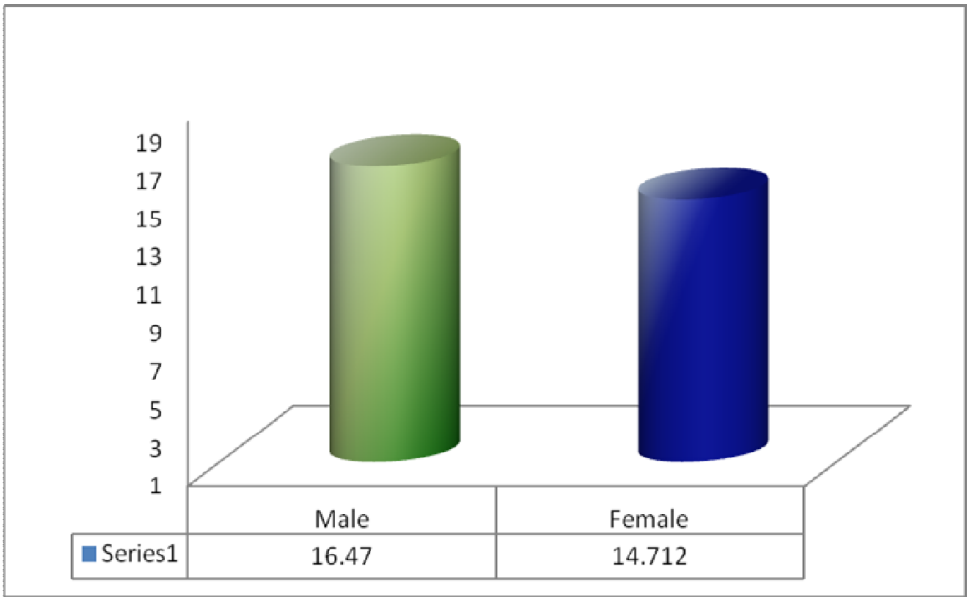


Figure 11. Graphical representation indicates girls and boys has significant difference in the mean scores of component of emotional regulation (positive refocusing)

Graphical representation shows that both boys and girls have significant difference in the component of Emotional Regulation (positive refocusing).

Comparison of the mean scores for the component of Emotional Regulation (Refocus on planning) of secondary school students based on gender; Boys and Girls.

Boys and girls were compared on their Refocus on Planning for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 13.

Table 13

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Refocus on planning) for the sample of Boys and Girls

Variable	Group	N	Mean	SD	t value	Level of significance
Refocus on planning	Boys	188	20.197	3.684	.085	N.S
	Girls	212	20.226	3.292		

N.S =Not Significant

Table No. 13 indicate that the mean scores of boys and girls almost the same in (Refocus on Planning) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t =.085). This shows that there is no significant difference in Refocus on planning values between the two gender classes.

The performance of boys and girls in Refocus on Planning was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Refocus on Planning) for the sample of Boys and Girls were shown in figure 12.

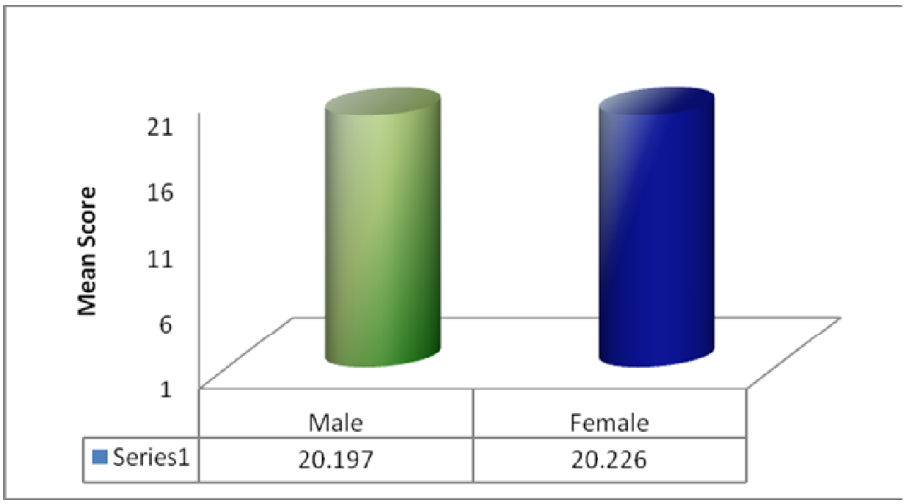


Figure 12. Graphical representation of mean scores of component of emotional regulation (refocus on planning) for the sample of boys and girls.

Graphical representation shows that both boys and girls are equal in the component of Emotional Regulation (positive refocusing).

Comparison of the mean scores for the component of Emotional Regulation (Positive Reappraisal) of secondary school students based on gender; boys and girls.

Boys and girls were compared on their Positive Reappraisal for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 14

Table 14

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Positive reappraisal) for the sample of Boys and Girls.

Variable	Group	N	Mean	SD	t value	Level of significance
Positive reappraisal	Boys	188	15.85	3.08	1.064	N.S
	Girls	212	15.55	2.53		

N.S =Not Significant

Table No.14 indicates that the mean scores of boys and girls almost the same in the (Positive reappraisal) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t =1.064). This shows that there is no significant difference in Positive reappraisal values between the two gender classes.

The performance of boys and girls in Positive reappraisal was examined graphically. The graphical representation of mean scores of

Component of Emotional Regulation (Positive reappraisal) for the sample of Boys and Girls were shown in figure 13.

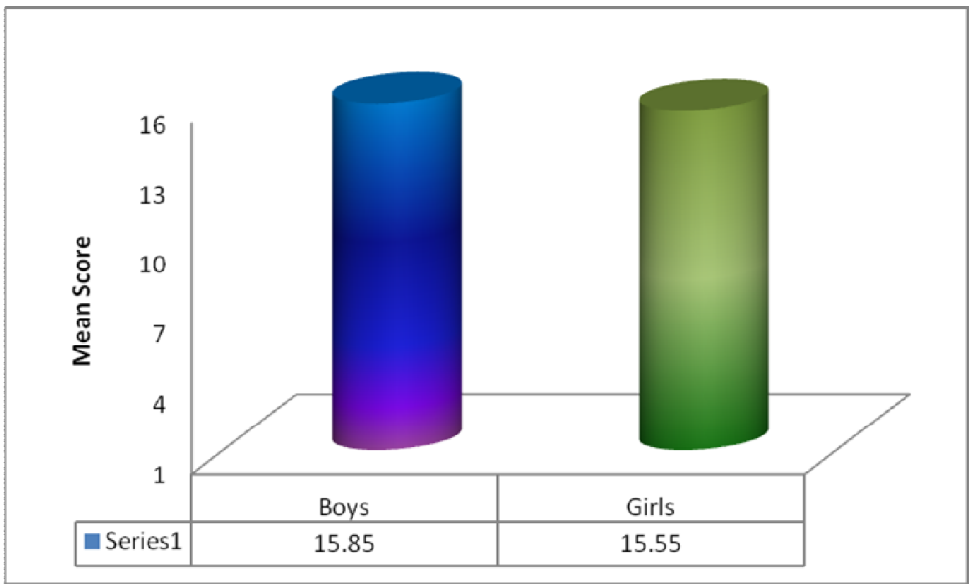


Figure 13. Graphical representation shows that both boys and girls are equal in the component of Emotional Regulation (positive reappraisal)

Graphical representation shows that both boys and girls are equal in the component of component of Emotional Regulation (positive reappraisal)

Comparison of the mean scores for the component of Emotional Regulation (Putting into Perspective) of secondary school students based on gender; boys and girls

Boys and girls were compared on their Putting into Perspective for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 15.

Table 15

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Putting into perspective) for the sample of High mean scores were associated with Boys suggesting superiority of Boys over girls in positive refocusing.

Variable	Group	N	Mean	SD	t value	Level of significance
Putting into perspective	Boys	188	18.23	3.78	.28	N.S
	Girls	212	18.13	3.46		

N.S =Not Significant

Table No.15 indicates that the mean scores of boys and girls almost the same in (Putting into Perspective) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t =.28). This shows that there is no significant difference in Putting into Perspective values between the two gender classes.

The performance of boys and girls in Putting into Perspective was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Putting into Perspective) for the sample of Boys and Girls were shown in figure 14.

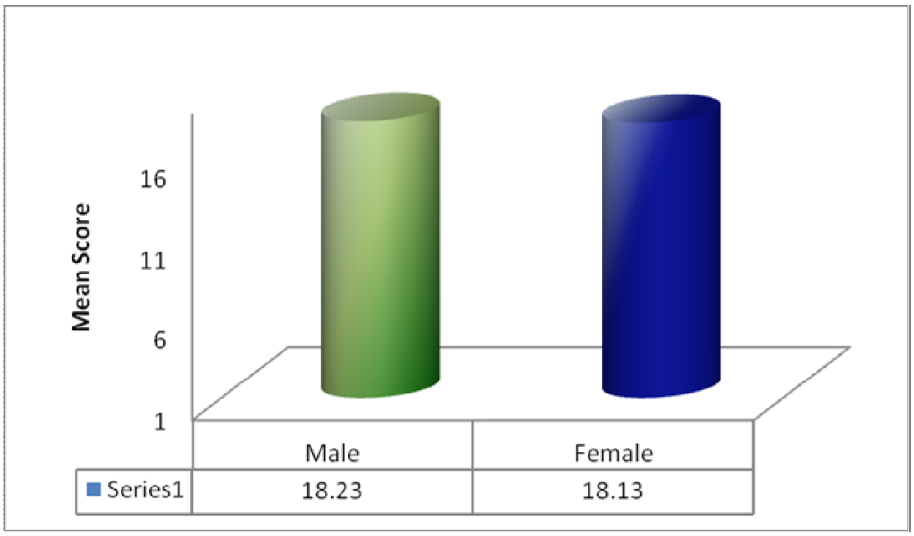


Figure 14. Graphical representation of mean scores of component of emotional regulation (putting into perspective) for the sample of boys and girls

Graphical representation shows that both boys and girls are equal in the component of Emotional Regulation (putting into perspective).

Comparison of the mean scores for the component of Emotional Regulation (Positive Refocusing) of secondary school students based on gender; boys and girls

Boys and Girls were compared on their Catastrophizing for this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 16

Table 16

Data and Result of Test of Significance of Difference between Mean Scores of Component of Emotional Regulation (Catastrophizing) for the Sample of Boys and Girls

Variable	Group	N	Mean	SD	t value	Level of significance
Catastrophizing	Boys	188	15.42	4.76	7.3**	0.01
	Girls	212	17.02	4.88		

**P<0.01

Table No. 16 indicates that the mean scores of boys and girls are differ in the (Catastrophizing) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at 0.01 level ($t=7.3$, $P<0.01$). This shows that there is a significant difference in Catastrophizing values between the two gender classes. High mean scores were associated with Girls suggesting the superiority of Girls over boys in positive refocusing

The performance of boys and girls in Catastrophizing was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Catastrophizing) for the sample of Boys and Girls were shown in figure 15.

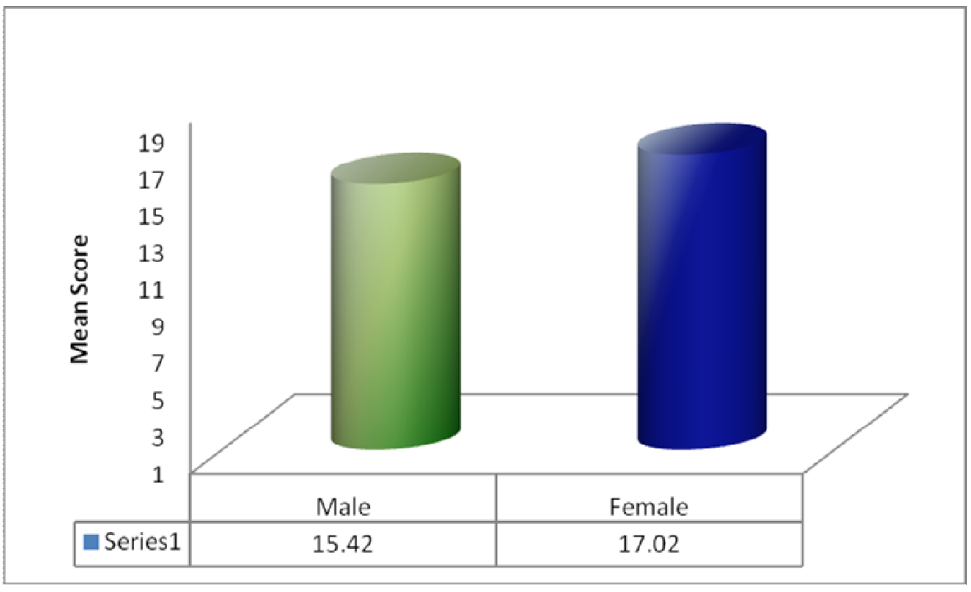


Figure 15. Graphical representation of mean scores of component of emotional regulation (Catastrophizing) for the sample of boys and girls

Graphical representation shows that both boys and girls have significant difference in the component of Emotional Regulation (Catastrophizing).

Comparison of the mean scores for the component of Emotional Regulation (Others Blame) of secondary school students based on gender; boys and girls

Boys and girls were compared on their Blaming others for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 17.

Table 17

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Blaming others) for the sample of Male and Female

Variable	Group	N	Mean	SD	t value	Level of Significance
Others Blame	Boys	188	13.71	3.95	7.3**	0.01
	Girls	212	15.18	4.22		

**P<0.01

Table No.17 indicates that the mean scores of boys and girls differ in (Others Blame) component of Emotional Regulation as the critical ratio estimated for the variable is greater than the minimum values required for significance at level (t =7.3, P<0.01). This shows that there is a significant difference in Blaming Others values between the two gender classes. High mean scores are associated with girls suggesting that are superior in Others Blame

The performance of boys and girls in Blaming Others was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Others Blame) for the sample of Boys and Girls were shown in figure 16.

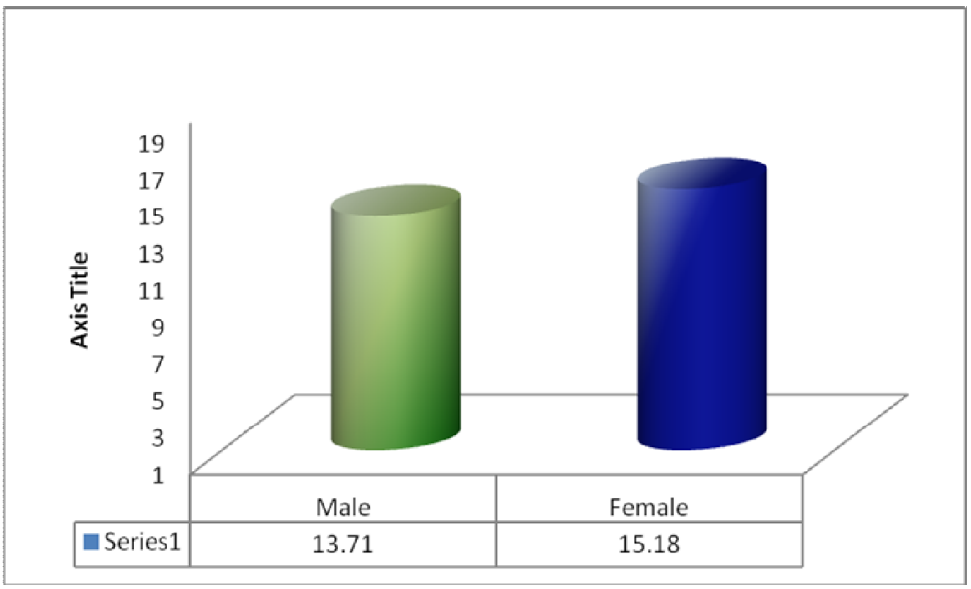


Figure 16. Graphical representation of mean scores of component of emotional regulation (Others Blame) for the sample of boys and girls

Graphical representation shows that both boys and girls have significant difference in the component of Emotional Regulation (Others Blame).

Comparison of mean scores of emotional regulation components in different subsamples reveals that there has no difference between male and female students in total sample and components of emotional regulation except positive refocusing, catastrophizing, Others Blame components of Emotional Regulation.

Estimation of Existing Level of Emotional Regulation component-wise of secondary school students of the subsample of Locale

Comparison of the mean scores of the emotional regulation of Urban and Rural in Total Sample

Urban and Rural were compared on their Emotion Regulation for the total sample, in this comparison, significant difference between mean values

of these group was found out by calculating the t value. The details are given in table 18.

Table 18

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation for total sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of Significance
Total	Urban	149	143.93	12.920	1.3	N.S
	Rural	251	142.01	14.995		

N.S =Not Significant

Table No.18 indicates that the mean scores of urban and rural almost the same in the total sample of Emotional Regulation. As the critical ratio estimated for the variable is less than the minimum values required for significance at 0.05 level (t =1.3). This shows that there is no significant difference in the Total sample of Emotional Regulation values between Urban and Rural locality. High mean scores were associated with rural group suggesting the superiority of rural group over the urban group in Emotional Regulation.

The performance of Urban and Rural on Emotional Regulation for the total sample was examined graphically. The graphical representation of mean scores of Emotional Regulation (total sample) of Urban and Rural was shown in figure 17.

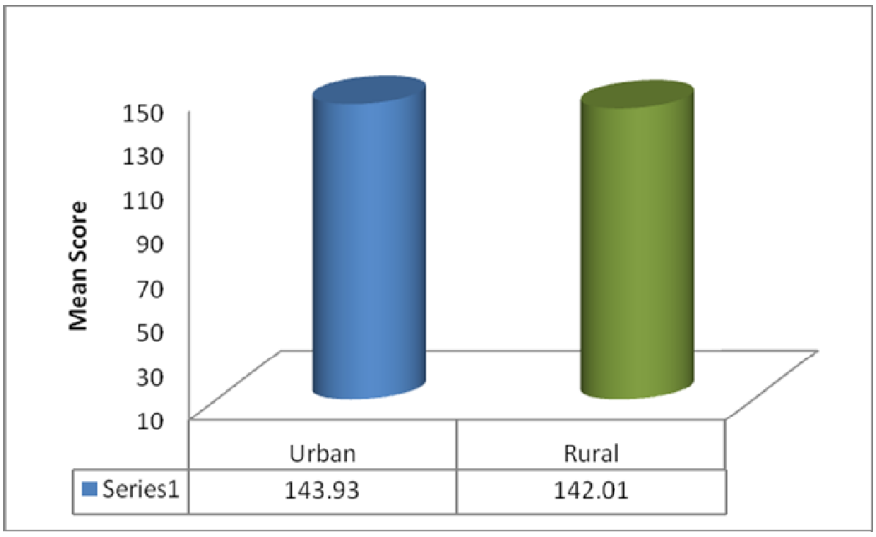


Figure 17. Graphical representation of mean scores of Emotional Regulation (total sample) of Urban and Rural

The graphical representation also shows that in Emotional Regulation Urban and Rural students are same.

Comparison of the mean scores for the Emotional Regulation component (Self Blame) of secondary school students based on Locale; Urban and Rural Groups

Urban and rural were compared on self-blame for this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 19

Table 19

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Self Blame) for the sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of significance
Self Blame	Urban	149	11.36	2.05	.42	N.S
	Rural	251	11.46	2.30		

N.S =Not Significant

Table No.19 indicate that the mean scores of urban and rural almost the same in the (Self Blame) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at level (t =.42). This shows that there is no significant difference in Self Blaming values between urban and rural groups.

The performance of urban and rural groups in Self Blame was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Self Blame) for the sample of Urban and Rural groups was shown in figure 18.

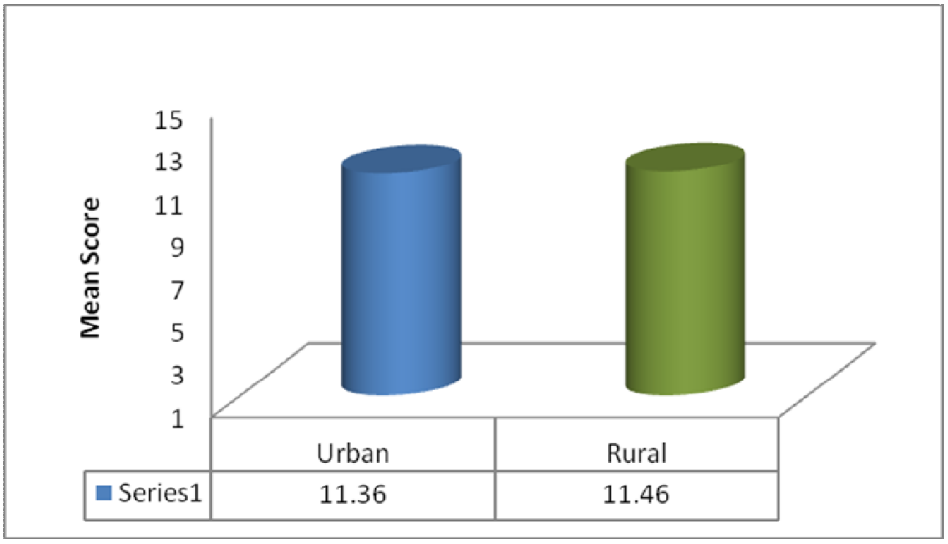


Figure 18. Graphical representation of mean scores of component of emotional regulation (Self Blame) for the sample of urban and rural groups

The graphical representation also high lights that both Urban and Rural students are same in the component of Emotional Regulation (Self Blame).

Comparison of the mean scores for the component of Emotional Regulation (Acceptance) of secondary school students based on Locale; Urban and Rural Groups

Urban and rural were compared on their self Acceptance for this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 20.

Table 20

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Acceptance) for the sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of significance
Acceptance	Urban	149	18.50	2.89367	7.83**	0.01
	Rural	251	19.94	3.538		

**P<0.01

Table No.20 indicate that the mean scores of urban and rural differ in the (Acceptance) component of Emotional Regulation as the critical ratio estimated for the variable is greater than the minimum values required for significance at 0.01 level (t =7.83, P<0.01). This shows that there is a significant difference in Acceptance values between urban and rural groups. High mean scores were associated with rural group suggesting the superiority of rural group over the urban group in Acceptance

The performance of urban and rural groups in Acceptance was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Acceptance) for the sample of Urban and Rural groups was shown in the figure 19.

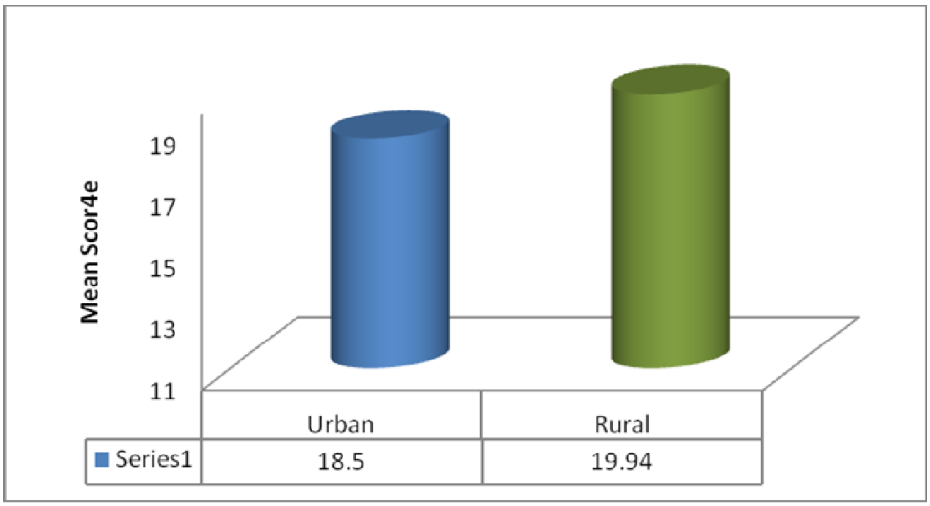


Figure 19. Graphical representation of mean scores of component of emotional regulation (Acceptance) for the sample of urban and rural groups

The graphical representation shows that both Urban and Rural students have significant difference in the component of Emotional Regulation (Acceptance).

Comparison of the mean scores for the components of Emotional Regulation (Rumination) of secondary school students based on Locale; Urban and Rural Groups

Urban and rural were compared on their Rumination for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 21.

Table 21

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Rumination) for the sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of significance
Rumination	Urban	149	13.55	2.45	.46	N.S
	Rural	251	13.67	2.36		

N.S =Not Significant

Table No.21 indicate that the mean scores of urban and rural almost the same in the (Rumination) component of Emotional Regulation as the critical ratio estimated for the variable are less than the minimum values required for significance at level (t=.46). This shows that there is no significant difference in Rumination between urban and rural groups.

The performance of urban and rural groups in Rumination was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Rumination) for the sample of Urban and Rural groups was shown in the figure 20.

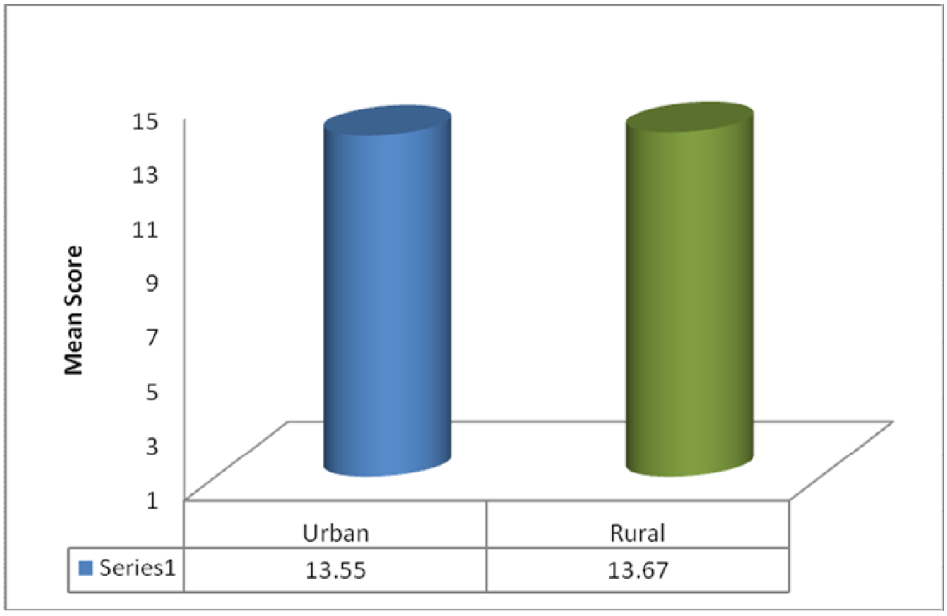


Figure 20. Graphical representation of mean scores of component of emotional regulation (rumination) for the sample of urban and rural groups.

The graphical representation also high lights that both Urban and Rural students are same in the component of Emotional Regulation (Rumination).

Comparison of the mean scores for the component of Emotional Regulation (Positive Refocusing) of secondary school students based on Locale; Urban and Rural Groups

Urban and Rural were compared on their Positive Refocusing for this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 22.

Table 22

Data and Result of Test of Significance of Difference between Mean Scores of Component of Emotional Regulation (Positive Refocusing) for the Sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of Significance
Positive refocusing	Urban	149	15.53	2.68	2.28*	0.05
	Rural	251	14.79	3.36		

*P<0.05

Table No.22 indicate that the rural and urban group differs significantly in the mean scores (Positive refocusing) component of Emotional Regulation as the critical ratio estimated for the variable is greater than the minimum values required for significance at 0.05 level (t =2.28, P<0.05). This shows that there is a significant difference in Positive Refocusing values between urban and rural groups. High mean scores were associated with urban group suggesting the superiority of urban group over the rural group in Positive Refocusing

The performance of urban and rural groups in positive refocusing was examined graphically. The graphical representation of mean scores of

Component of Emotional Regulation (positive refocusing) for the sample of Urban and Rural groups was shown in the figure 21.

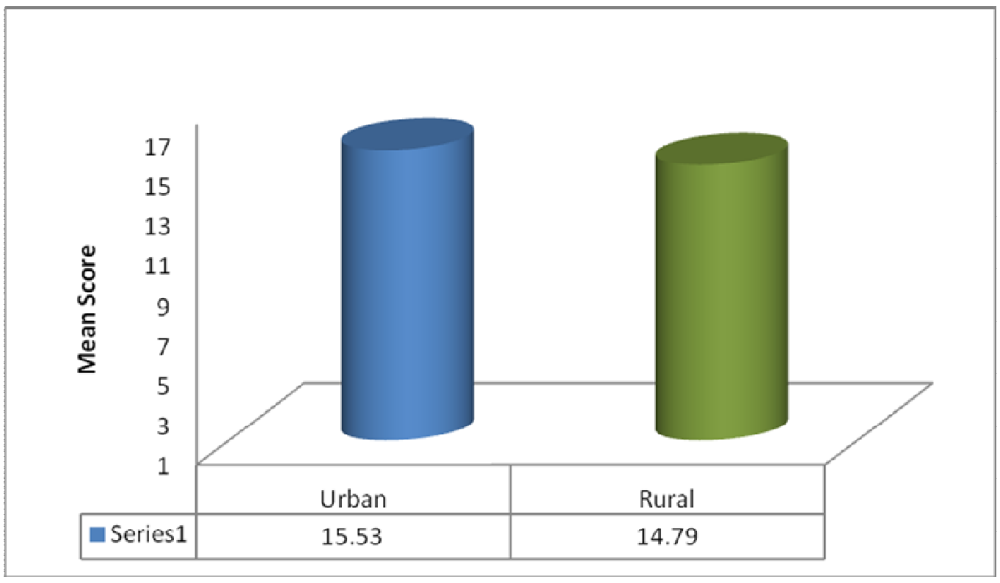


Figure 21. Graphical representation of mean scores of component of emotional regulation (Positive Refocusing) for the sample of urban and rural groups

The graphical representation also high lights that both Urban and Rural students have significant difference in the component of Emotional Regulation (Positive Refocusing).

Comparison of the mean scores for the component of Emotional Regulation (Refocus on Planning) of secondary school students based on Locale; Urban and Rural Groups

Urban and Rural were compared on their refocus on planning for this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 23

Table 23

Data and Result of Test of Significance of Difference between Mean Scores of Component of Emotional Regulation (Refocus on Planning) for the Sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of Significance
Refocus on planning	Urban	149	20.59	2.79	9.03**	0.01
	Rural	251	18.99	3.21		

**P<0.01

Table No.23 indicate that the rural and urban group differs significantly in the mean scores (Refocus on Planning) component of Emotional Regulation as the critical ratio estimated for the variable is greater than the minimum values required for significance at level (t =9.03, P<0.01). This shows that there is a significant difference in Refocus on planning values between urban and rural groups. High mean scores were associated with urban groups suggesting the superiority of urban groups over the rural group in Refocus on planning.

The performance of urban and rural groups in Refocus on Planning was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Refocus on Planning) for the sample of Urban and Rural groups was shown in the figure 22.

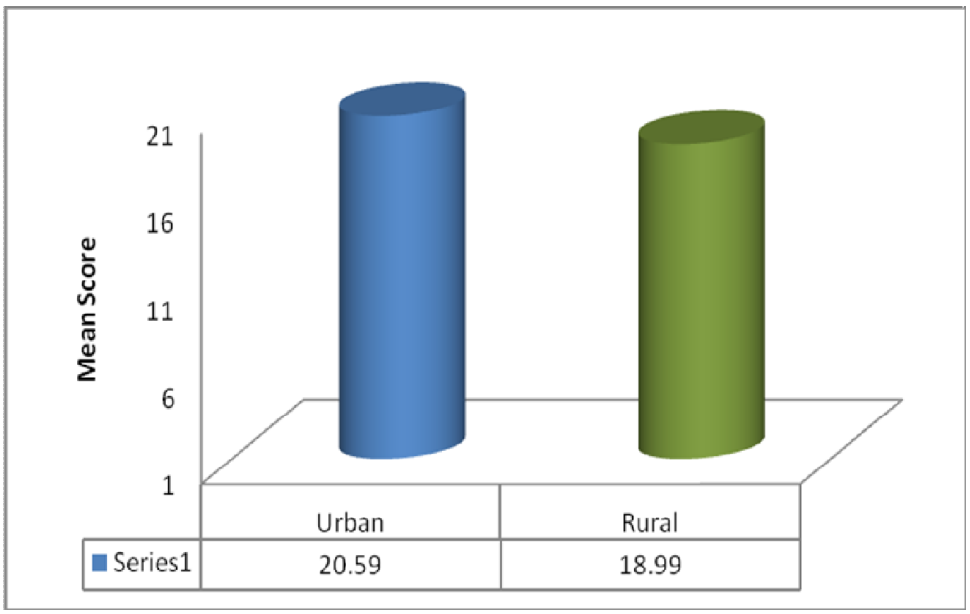


Figure 22. Graphical representation of mean scores of component of emotional regulation (refocus on planning) for the sample of urban and rural groups

The graphical representation also high lights that both Urban and Rural students have significant difference in the component of Emotional Regulation (Refocus on Planning).

Comparison of the mean scores for the component of Emotional Regulation (Positive Reappraisal) of secondary school students based on Locale; Urban and Rural Groups

Urban and rural were compared on their Positive Reappraisal for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 24.

Table 24

Data and Result of Test of Significance of Difference between Mean Scores of Component of Emotional Regulation (Positive Reappraisal) for the Sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of Significance
Positive re-appraisal	Urban	149	15.64	2.29	.24	N.S
	Rural	251	15.71	3.07		

N.S =Not Significant

Table No. 24 indicate that the mean scores of urban and rural groups almost the same in the (Positive reappraisal) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at level (t =.24). This shows that there is no significant difference in Positive reappraisal values between urban and rural groups.

The performance of urban and rural groups in Positive Reappraisal was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Positive Reappraisal) for the sample of Urban and Rural groups was shown in figure 23.

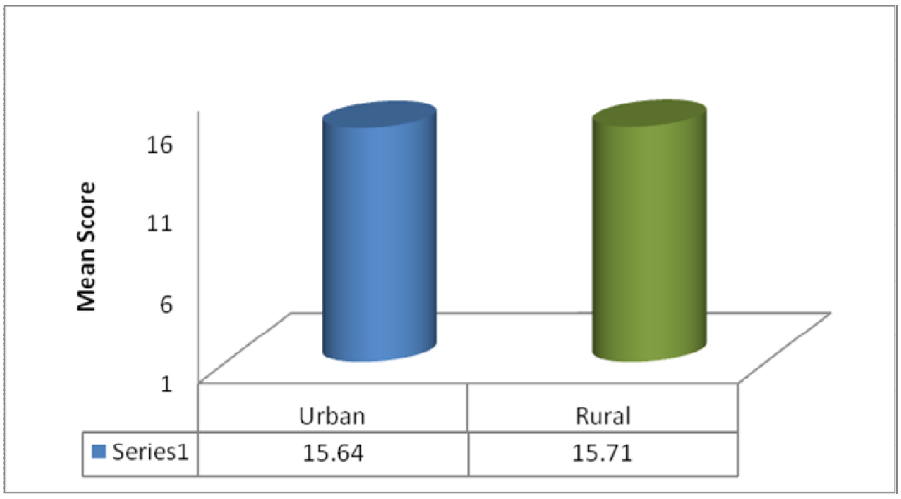


Figure 23. Graphical representation of mean scores of component of emotional regulation (positive reappraisal) for the sample of urban and rural groups

The graphical representation also high lights that both Urban and Rural students are same in the component of Emotional Regulation (Positive Reappraisal).

Comparison of the mean scores for the component of Emotional Regulation (Putting into Perspective) of secondary school students based on Locale; Urban and Rural Groups.

Urban and Rural groups were compared on putting into perspective for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 25.

Table 25

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Putting into Perspective) for the sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of Significance
Putting into perspective	Urban	149	18.24	3.52	.28	N.S
	Rural	251	18.14	3.67		

N.S =Not Significant

Table No. 25 indicate that the mean scores of urban and rural groups almost the same in (Putting into Perspective) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at level (t =.28). This shows that there is no significant difference in Putting into Perspective values between urban and rural groups.

The performance of urban and rural groups in Putting into Perspective was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Putting into Perspective) for the sample of Urban and Rural groups was shown in the figure 24.

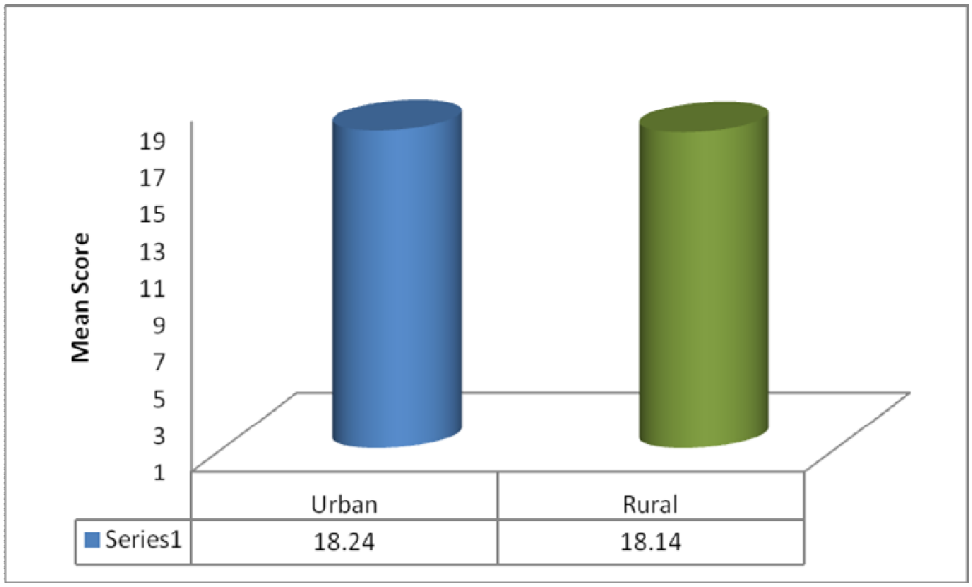


Figure 24. Graphical representation of mean scores of component of emotional regulation (putting into perspective) for the sample of urban and rural groups

The graphical representation also high lights that both Urban and Rural students are same in the component of Emotional Regulation (Putting into Perspective).

Comparison of the mean scores for the component of Emotional Regulation (Catastrophizing) of secondary school students based on Locale; Urban and Rural Groups

Urban and rural were compared on their catastrophizing for this comparison, significant difference between the mean values of these groups was found out by calculating the t value. The details are given in table 26.

Table 26

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Catastrophizing) for the sample of Urban and Rural.

Variable	Group	N	Mean	SD	t value	Level of Significance
Catastrophizing	Urban	149	16.25	4.17	8.77**	0.01
	Rural	251	14.44	3.69		

**P<0.01

Table No. 26 indicate that the rural and urban groups are differ significantly in the mean scores of (Catastrophizing) component of Emotional Regulation as the critical ratio estimated for the variable was greater than the minimum values required for significance at 0.01 level (t =8.77, P<0.01). This shows that there is a significant difference in Catastrophizing values between urban and rural groups. High mean scores were associated with urban group suggesting the superiority of urban group over the rural group in Catastrophizing

The performance of urban and rural groups in Catastrophizing was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Catastrophizing) for the sample of Urban and Rural groups was shown in figure 25.

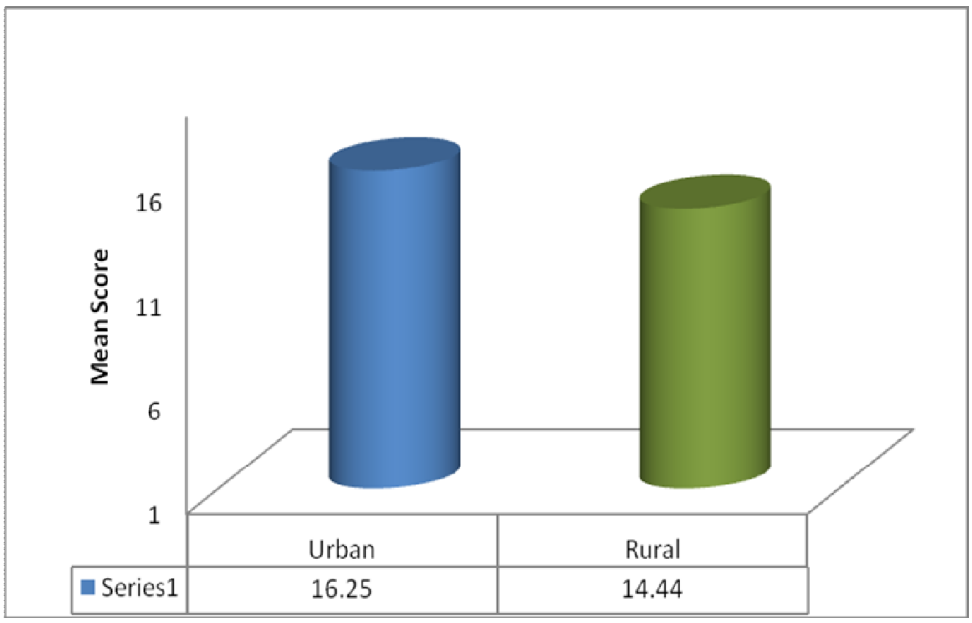


Figure 25. Graphical representation of mean scores of component of emotional regulation (catastrophizing) for the sample of urban and rural groups

The graphical representation also high lights that both Urban and Rural students have significant difference in the component of Emotional Regulation (Catastrophizing).

Comparison of the mean scores for the component of Emotional Regulation (Others Blame) of secondary school students based on Locale; Urban and Rural Groups

Urban and rural were compared on their Blaming Others for this comparison, significant difference between mean values of these groups was found out by calculating the t value. The details are given in table 27.

Table 27

Data and Result of test of significance of difference between mean scores of Component of Emotional Regulation (Blaming others) for the sample of Urban and Rural

Variable	Group	N	Mean	SD	t value	Level of significance
Blaming others	Urban	149	14.26	3.49	1.2	N.S
	Rural	251	13.78	4.09		

N.S =Not Significant

Table No.27 indicates that the mean scores of urban and rural groups almost the same in (Others Blame) component of Emotional Regulation as the critical ratio estimated for the variable is less than the minimum values required for significance at level (t=1.2). This shows that there is no significant difference in Blaming Others values between urban and rural groups. High mean scores were associated with urban groups suggesting the superiority of urban groups over the rural group in Catastrophizing.

The performance of urban and rural groups in Blaming Others was examined graphically. The graphical representation of mean scores of Component of Emotional Regulation (Others Blame) for the sample of Urban and Rural groups was shown in figure 26.

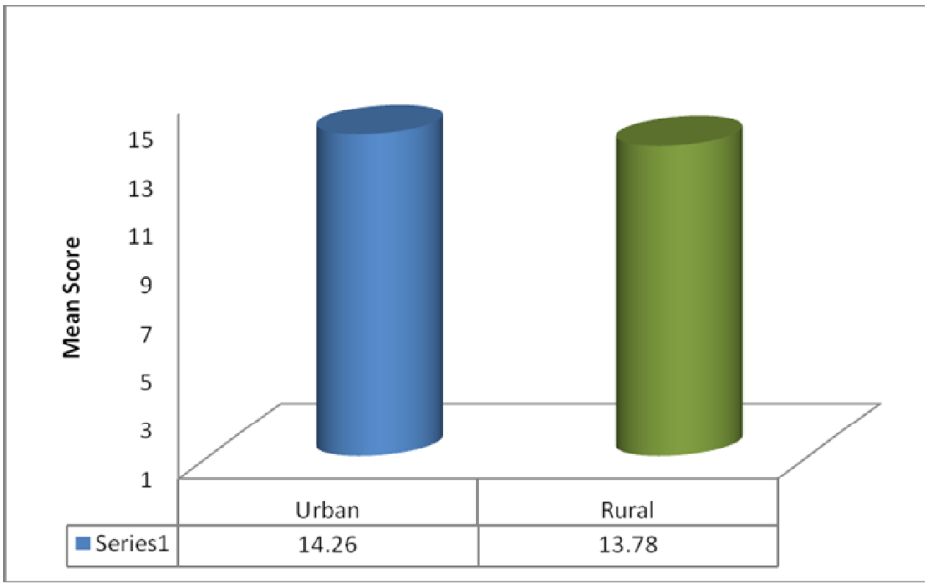


Figure 26. Graphical representation of mean scores of Component of Emotional Regulation (Blaming Others) for the sample of Urban and Rural groups

The graphical representation also high lights that both Urban and Rural students are same in the component of Emotional Regulation (Others Blame).

Comparison of mean scores of emotional regulation components in different subsamples reveals that there has Significant difference between urban and rural groups with regard to the components of emotional regulation like acceptance, positive refocusing, refocusing on planning, and catastrophizing. All other components of emotional regulation have no significant difference in their sub sample.

Analysis of Data from Experiment

Statistical Constants of the Variables

To identify the basic properties of the distributions of the dependent variable and the covariates, a preliminary analysis was done. Mean, Median,

Mode, Standard Deviation, Skewness, Kurtosis and range of the pre-test and post-test scores of the dependent variables and the pre-test scores of the covariates emotional regulation, process skills in social science, Non-verbal Intelligence, Classroom environment Inventory, and Socio-Economic Status were computed separately for experimental and control groups (Total sample, Subsample).

To collect Emotional Regulation, Emotional Regulation Scale (Aruna & Haris, 2018) was used. Possible minimum and the maximum score of Emotional Regulation are 40 and 200 respectively.

To collect data on Process Skills in Social Science, Test of Process Skills in Social Science (Aruna, Shiji & Surabi, 2014) was used. Minimum and Maximum possible score of Process Skills in Social Science are zero and 32 respectively.

For equating the group in the Non-Verbal Intelligence and Standard Progressive Matrices Test (Raven 1958) was used. The minimum and maximum possible scores of Non-Verbal Intelligence are zero to 60. Similarly Classroom Environment Inventory was used. The minimum and maximum possible scores of Classroom Environment Inventory are zero and 47 respectively. For Socio-Economic Status, Socio-Economic Status scale (Aruna & Sumi, 2010) is used. The minimum and maximum possible scores of Socio-Economic Status are 5 to 105 respectively.

The ratio between Skewness (Sk) and Skewness (SEsk) and the ratio between kurtosis (Ku) was calculated and interpreted as per criteria for

normality of distribution given in Kim (2013). Normal PP Plots of the pretest scores of the variables were also utilized to check the normality of pretest scores of the experimental group and control group.

Pretest scores of the variables for the experimental group.

The statistical constants of the pretest scores of the variables Emotional Regulation, Process Skills in social science, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status of the experimental group for the total sample, subsample Boys and sub-sample Girls are presented in table 28 table 29 and table 29 respectively

Table 28

Statistical Constants of the Pretest Scores of the Variable for the Experimental Group -Total Sample

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	45	132.67	133.00	133.006	12.16	0.07	-0.84
Process skills in social science	45	12.73	13	14	2.54	-0.50	-0.37
Non-verbal intelligence	45	42.71	42	42	4.74	-0.25	-0.03
Classroom Environment	45	21.64	21	21	5.73	1.47	2.08
Socio economic status	45	29.06	26	25	6.50	0.58	-0.84

Table 28. reveals that Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, Non-verbal Intelligence, Classroom Environment Inventory, Socio-Economic Status reveals that the scores are

somewhat dispersed from the central value. For the Emotional Regulation, Classroom Environment and Socio-Economic Status distribution of the scores positively skewed and for the remaining variables, the distributions are negatively skewed. Most of the distributions such as Emotional Regulation, Process Skills in Social Science, Non-Verbal Intelligence and Socio-Economic Status are Leptokurtic and for classroom environment, it is Platykurtic.

Table 29

Statistical Constants of the Pretest Scores of the Variable for the Experimental Group -Subsample Boys

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	20	129.15	130.50	111	11.09	0.11	-0.32
Process skills in social science	20	12.95	14	16	3.26	-0.55	-0.96
Non-verbal intelligence	20	41.80	42	42	5	0.00	-0.31
Classroom Environment	20	21.75	20	20	5.99	1.69	1.99
Socio economic status	20	30.7	31	22	7.58	0.19	-1.35

Table 29 reveals that Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, Non-verbal Intelligence, Classroom Environment Inventory, Socio-Economic Status reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status distribution of the scores positively skewed and for the remaining variables,

the distributions are negatively skewed. Most of the distributions such as Emotional Regulation, Process Skills in Social Science, Non-Verbal Intelligence and Socio-Economic Status are Leptokurtic and for classroom environment, it is Platykurtic.

Table 30

Statistical Constants of the Pretest Scores of the Variable for the Experimental Group -Subsample Girls

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	25	135.48	137	118	12.46	-0.09	-1.09
Process skills in social science	25	12.56	13	14	1.83	-0.79	-0.33
Non-verbal intelligence	25	43.44	43	42	4.49	-0.44	0.85
Classroom Environment	25	21.56	21	21	5.63	1.37	2.94
Socio economic status	25	27.76	26	24	5.29	0.77	-0.53

Table 30 indicates that Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, Non-verbal Intelligence, Classroom Environment Inventory, Socio-Economic Status reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, Non-Verbal Intelligence and Classroom Environment distribution of the scores positively skewed and for the remaining variables, the distributions are negatively skewed. Most of the distributions such as Emotional Regulation, Process Skills in Social Science, Socio-Economic Status are Leptokurtic and those of remaining variables are Platykurtic.

Pretest scores of the variables for the control group.

The statistical constants of the pretest scores of the variables Emotional Regulation, Process Skills in social science, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status of the control group for the total sample, subsample Boys and sub-sample Girls are presented in table 31 table 32 and table 33 respectively

Table 31

Statistical Constants of the Pretest Scores of the Variable for the Control Group -Total Sample

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	45	128.16	131	132	10.97	-1.01	0.96
Process skills in social science	45	12.44	13	13	2.16	-0.45	0.36
Non-verbal intelligence	45	42.49	42	42	4.59	-0.14	-0.17
Classroom Environment	45	21.51	21	21	5.91	1.17	1.75
Socio economic status	45	30.80	33	25	6.41	0.07	-1.20

Table 31 reveals that Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the control group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, Non-verbal Intelligence, Classroom Environment Inventory, Socio-Economic Status reveals that the scores are somewhat dispersed from the central value. For the Classroom Environment and Socio-Economic Status distribution of the scores positively skewed and for the remaining variables, the distributions are negatively skewed. Most of the distributions such as Emotional Regulation, Process Skills in Social Science,

Classroom Environment are Platykurtic and those of remaining variables are Leptokurtic

Table 32

Statistical Constants of the Pretest Scores of the Variable for the Control Group -Subsample Boys

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	20	122.4	121.5	98	13.4	-0.19	-0.74
Process skills in social science	20	13.1	13	12	1.97	0.12	-0.01
Non-verbal intelligence	20	42.5	42	42	4.16	-0.62	1.8
Classroom Environment	20	21.1	21	21	4.98	2.02	4.39
Socio economic status	20	31.7	34	34	6.75	0.12	-1.11

From table 32, it can be seen that Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, Non-verbal Intelligence, Classroom Environment Inventory, Socio-Economic Status reveals that the scores are somewhat dispersed from the central value. For the Process Skills in Social Science Classroom Environment and Socio-Economic Status distribution of the scores positively skewed and for the remaining variables, the distributions are negatively skewed. Most of the distributions such as Emotional Regulation, Process Skills in Social Science, Socio-Economic Status are Leptokurtic and for Classroom Environmen, it is Platykurtic.

Table 32 reveals that Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the

experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, Non-verbal Intelligence, Classroom Environment Inventory, Socio-Economic Status reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, Non-Verbal Intelligence and Classroom Environment distribution of the scores positively skewed and for the remaining variables, the distributions are negatively skewed. Most of the distributions such as Emotional Regulation, Process Skills in Social Science, Socio-Economic Status and Non-Verbal Intelligence are Lepto kurtic and those of remaining variables are Platykurtic.

Post test scores of the variables for the Experimental group

The statistical constants of the post-test scores of the variables Emotional Regulation and Process Skills in social science of control group for the total sample, subsample Boys and sub-sample Girls are presented in table 33 table 34 and table 35 .respectively.

Table 33

Statistical Constants of the Posttest Scores of the Variable for the Experimental Group -Total Sample

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	45	18.31	18	15.00	7.73	0.112	-1.01
Process Skills in Social Science	45	10.22	11	7	4.67	-0.14	-0.86

Table 33. reveals that the Mean, median and mode of the posttest scores of the variable for the total sample of secondary school students in the experimental

group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. Forth Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation and distribution Process Skills in Social Science are Leptokurtic.

Table 34

Statistical Constants of the Posttest Scores of the Variable for the Experimental Group -Subsample Boys

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	20	18.85	18.50	10	8.32	0.13	-1.22
Process Skills in Social Science	20	10.40	11.5	11	5.08	-0.41	-0.71

Table 34 reveals that the Mean, median and mode of the posttest scores of the variable for the Boys sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation is Platykurtic and distributions of Process Skills in Social Science is Leptokurtic

Table 35

Statistical Constants of the Posttest Scores of the Variable for the Experimental Group -Subsample Girls

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	25	17.88	17	7	7.36	0.03	-0.83
Process Skills in Social Science	25	10.08	10	7	4.42	0.12	-0.94

Table 35 reveals that the Mean, median and mode of the posttest scores of the variable for the total sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation and Process skills in social science, the distributions are negatively skewed. The distribution of the variables Emotional Regulation and process skills in social science are Platykurtic.

Posttest scores of the variables for the control group.

The statistical constants of the posttest scores of the variables Emotional Regulation and Process Skills in social science, of the experimental group for the total sample, subsample Boys and sub-sample Girls are presented in table 36 able 37 and table 38 respectively

Table 36

Statistical Constants of the Posttest Scores of the Variable for the Control Group -Total Sample

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	45	14.80	13	6	7.70	0.81	0.52
Process Skills in Social Science	45	7.89	7	5	4	0.19	-1.36

Table 36 reveals that the Mean, median and mode of the pretest scores of the variable for the total sample of secondary school students in the control group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation and distribution Process Skills in Social Science are Leptokurtic

Table 37

Statistical Constants of the Posttest Scores of the Variable for the Control Group -Subsample Boys

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	20	17	16.5	8	8.46	0.86	0.73
Process Skills in Social Science	20	8.6	9.5	6	4.17	-0.16	-1.3

Table 37. reveals that the Mean, median and mode of the posttest scores of the variable for the total sample of secondary school students in the control group are almost similar. The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation is Platykurtic and distributions of Process Skills in Social Science is Leptokurtic.

Table 38

Statistical Constants of the Posttest Scores of the Variable for the Control Group -Subsample Girls

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	25	13.04	10	6	6.69	0.509	-1.11
Process Skills in Social Science	25	7.32	5	5	3.85	0.49	-1.17

Table 38 reveals that the Mean, median and mode of the posttest scores of the variable for the total sample of secondary school students in the control group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation and Process skills in social science, the distributions are positively skewed. The distribution of the variables Emotional Regulation and process skills in social science are Leptokurtic.

Gain scores of the variables for the Experimental group.

The statistical constants of the gain scores of the variables Emotional Regulation and Process Skills in social science, of the experimental group for the total sample, subsample Boys and sub-sample Girls are presented in table 39 table 40 and table 41 respectively

Table 39

Statistical constants of the gain scores of the variable for the Experimental group -total sample

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	45	18.31	18	15.006	7.73	0.112	-1.01
Process skills in social science	45	10.22	11	7	4.67	-0.14	-0.86

Table 39 reveals that the Mean, median and mode of the gain scores of the variable for the total sample of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation and distribution Process Skills in Social Science are Leptokurtic

Table 40

Statistical constants of the gain scores of the variable for the Experimental group -Subsample Boys

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	20	18.85	18.50	10	8.32	0.13	-1.22
Process skills in social science	20	10.40	11.5	11	5.08	-.41	-.71

Table 40 reveals that the Mean, median and mode of the posttest scores of the variable for the subsample Boys of secondary school students in the experimental group are almost similar The standard deviation of Emotional

Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation and Process Skills in Social Science distribution is Platykurtic

Table 41

Statistical Constants of the Gain Scores of the Variable for the Experimental group -Subsample Girls

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	25	17.88	17	.7	7.36	0.03	-.83
Process skills in social science	25	10.08	10	7	4.42	0.12	-.94

Table 41 reveals that the Mean, median and mode of the gain scores of the variable for the total Girls of secondary school students in the experimental group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation distribution and process skills in social science, distribution is positively skewed. The distributions of the variables Emotional Regulation and process skills in social science are leptokurtic.

Gain Scores of the variables for the control group

The statistical constants of the pretest scores of the variables Emotional Regulation, Process Skills in social science, of the experimental group for the total sample, subsample Boys and sub-sample Girls are presented in table 42 table 43 and table 44 respectively

Table 42

Statistical Constants of the Gain Scores of the Variable for the Control Group -Total Sample

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	45	14.80	13	6	7.70	0.81	0.52
Process skills in social science	45	7.89	7	5	4	0.19	-1.36

Table 42 reveals that Mean, Median, and mode of the gain scores of the variable for the total sample of secondary school students in the control group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation, the distribution and Process Skills in Social Science distribution positively skewed. The distributions of the variable Emotional Regulation is Platykurtic and distribution Process Skills in Social Science is Leptokurtic

Table 43

Statistical Constants of the Gain Scores of the Variable for the Control Group -Subsample Boys

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	20	17	16.5	8	8.46	0.509	0.86
Process skills in social science	20	8.6	9.5	6	4.17	0.49	-.16

Table 43 reveals that the Mean, median and mode of the gain scores of the variable for the subsample Boys of secondary school students in the control group are almost similar The standard deviation of Emotional Regulation and Process Skills in Social Science, reveals that the scores are somewhat

dispersed from the central value. For the Emotional Regulation, the distribution is positively skewed and for Process Skill in Social Science, the distribution is negatively skewed. The distribution of the variable Emotional Regulation is Platy Kurtic and distribution of Process Skills in Social Science is Leptokurtic

Table 44

Statistical Constants of the Gain Scores of the Variable for the Control Group -Subsample Girls

Variables	N	Mean	Median	Mode	SD	SK	KU
Emotional Regulation	25	13.04	10	6	6.69	0.509	-1.11
Process skills in social science	25	7.32	5	5	3.85	0.49	-1.17

Table 44 reveals that the Mean, median and mode of the gain scores of the variable for the Subsample Girls of secondary school students in the control group are almost similar The standard deviation of Emotional Regulation, Process Skills in Social Science, reveals that the scores are somewhat dispersed from the central value. For the Emotional Regulation distribution and process skills in social science, distribution is positively skewed. The distributions of the variables Emotional Regulation and process skills in social science are leptokurtic.

The above tables show the basic properties of the distributions of the dependent variable and the covariates, preliminary analysis was done. Mean, Median, Mode, Standard Deviation, Skewness, Kurtosis and range of the pretest, post-test and gain scores of the dependent variables and the pre-test

scores of the covariates emotional regulation, process skills in social science, Non-verbal Intelligence, Classroom environment Inventory, and Socio-Economic Status were computed separately for experimental and control groups (Total sample, Subsample) are almost near to the normality.

Mean Difference Analysis

Difference in mean pretest scores of the Emotional Regulation variable and its components between the experimental and control groups, mean difference in pretest and posttest scores of experimental group and control group, difference in mean posttest scores of the variables for experimental and control groups and difference in mean gain scores between the experimental and control groups were investigated before controlling the effects of the Covariates. Mean difference analysis was used for comparison. 0.05 and 0.01 level was fixed as a level of significance.

Comparison of the mean pretest scores of Emotional Regulation between Experimental and Control group

Test of significance of the difference between two means was utilized to compare the status before the intervention of both experimental and control groups concerning the Emotional Regulation and its components such as Self blame, Acceptance, Rumination, Positive Refocusing, Refocus on planning, Positive reappraisal, putting into perspective, Catastrophizing, Blaming Others. To check whether there exists any statistically significant difference between means of the emotional regulation and its components scores of the groups before the experiment, mean pretest scores of the two groups were

calculated and these values were subjected to test of significance of the difference between means for total sample and component-wise are given in the following sections.

Comparison of the mean pretest scores of Emotional Regulation between Experimental and Control group for a total sample

To compare the pre-experimental status of the Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of the Emotional Regulation of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 45

Table 45

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation between Experimental and Control Groups-Total Sample

Groups Compared	Sample size	Mean	S.D.	t-value	Level of Significance
Experimental Group	45	132.67	12.16	1.85	N.S
Control Group	45	128.16	10.97		

N.S =Not Significant

It is clear from the table 45 that the calculated t value obtained by the pre-test scores of Emotional Regulation for experimental and control groups for the total sample is 1.85 which is not significant at 0.05 level of significance. This shows that the pre-experimental emotional regulation of secondary school students in experimental and control groups are almost the same for the total

sample. Hence the two groups are comparable in terms of the level of emotional regulation of secondary school students for a total sample

The mean pretest scores of emotional regulation of experimental and control groups for the total sample are represented graphically in Figure 27.

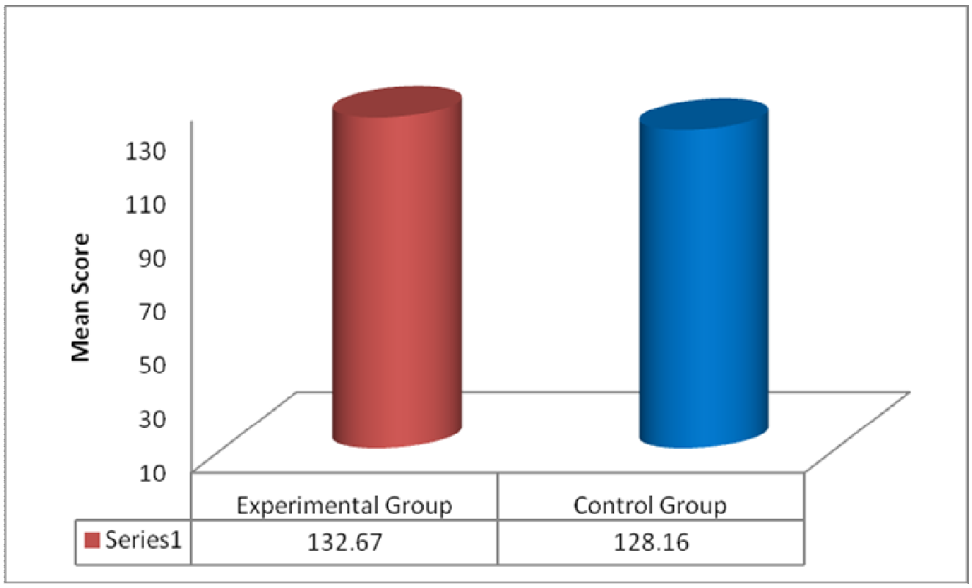


Figure 27. Comparison of mean pretest scores of emotional regulation of experimental and control groups - total sample

The graphical representation of mean pretest scores of the Emotional Regulation of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal for the total sample. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional regulation (component-wise) between Experimental and control group

Below given table shows nine component-wise pretest score comparisons between the control group and the experimental group. It shows the difference in each component of Emotional Regulation before the treatment in control and experimental groups.

Comparison of the mean pretest scores of Emotional Regulation component (Self Blame) of the experimental and control group

To compare the pre-experimental status of Self Blame of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Self Blame of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 46.

Table 46

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Self Blame) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Self Blame	Experimental group	45	10.78	2.44	.44	N.S
	Control group	45	10.98	1.83		

N.S= Not Significance

It is clear from the table 46 that the calculated t value obtained by the pre-test scores of (Self Blame) component of Emotional Regulation for experimental and control groups for the total sample is .44 which is not significant even at 0.05 level of significance. This shows that the pre-experimental Self Blame of secondary school students in experimental and control groups are almost the same in secondary school students. Hence the two groups are comparable in terms of the level of Self Blame of secondary school students.

The mean pretest scores of Self Blame of experimental and control groups in secondary school students are represented graphically in Figure 28

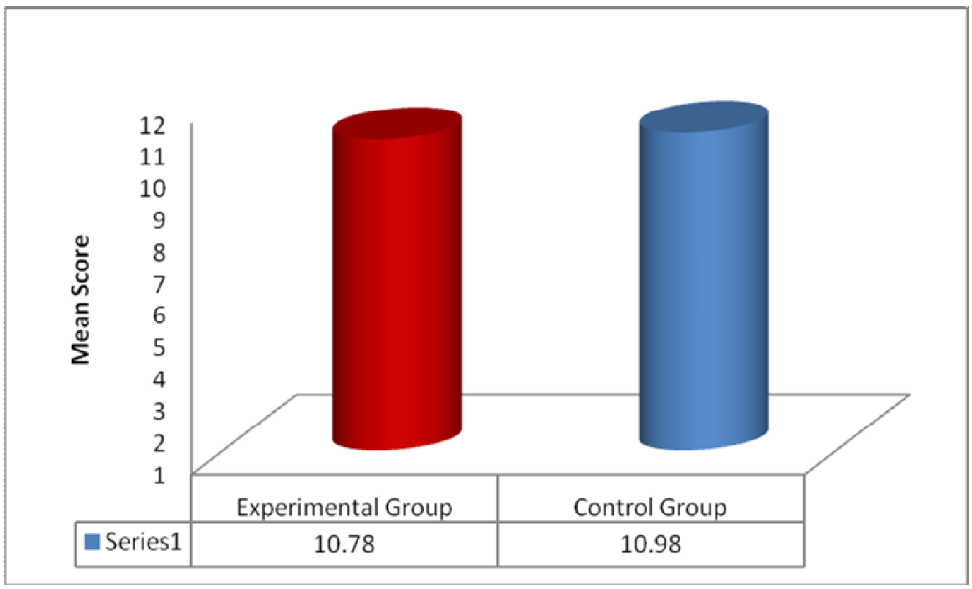


Figure 28. Comparison of the mean pretest scores of emotional regulation component (Self Blame) of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Self Blame of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Acceptance) of the experimental and control group

To compare the pre-experimental status for (Acceptance) component of Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Acceptance of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 47.

Table 47

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Acceptance) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Acceptance	Experimental group	45	16.56	3.29	.39	N.S
	Control group	45	16.80	2.59		

N.S =Not Significant

It is clear from the table 47 that the calculated t value obtained by the pre-test scores of (Acceptance) component of Emotional Regulation for experimental and control groups for the total sample is .39 which is not significant even at 0.05 level of significance. This shows that the pre-experimental Acceptance of secondary school students in experimental and control groups are almost the same. Hence the two groups are comparable in terms of the level of Acceptance of secondary school students.

The mean pretest scores of Acceptance of experimental and control groups of secondary school students are represented graphically in Figure 29.

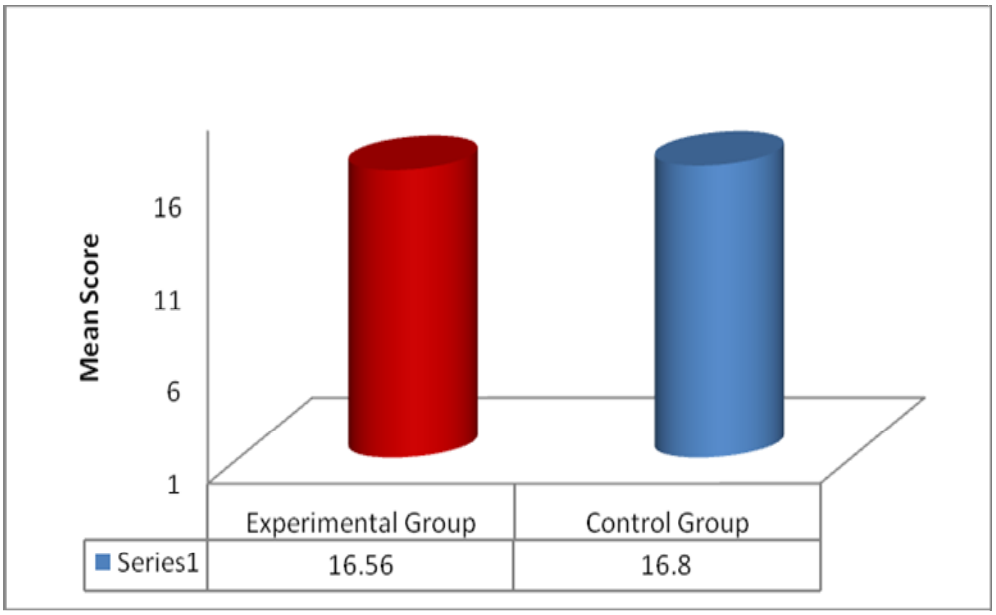


Figure 29. Comparison of the mean pretest scores of Acceptance of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Acceptance of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal in secondary school students. This supports the result of mean difference analysis.

Comparison of mean pretest scores of Emotional Regulation component (Rumination) of the experimental and control group

To compare the pre-experimental status of Rumination of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Rumination of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 48.

Table 48

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Rumination) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Rumination	Experimental group	45	11.84	2.14	1.75	N.S
	Control group	45	12.60	1.94		

N.S =Not Significant

It is clear from the table 48 that the calculated t value obtained by the pre-test scores of Rumination for experimental and control groups for the total sample is .1.75 which is not significant at 0.05 level of significance. This shows that the pre-experimental Rumination of secondary school students in experimental and control groups are almost the same. Hence the two groups are comparable in terms of the level of Rumination of secondary school students.

The mean pretest scores of the Rumination of experimental and control groups of secondary school students are represented graphically in Figure 30

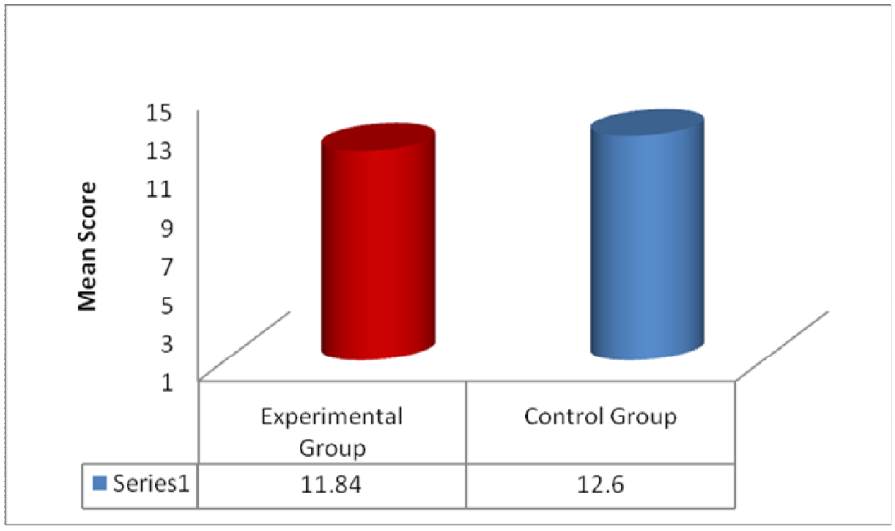


Figure 30. The mean pretest scores of rumination of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of the Rumination of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal in secondary school students. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Positive Refocusing) comparison between the experimental and control group

To compare the pre-experimental status for (Positive Refocusing) component of Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Positive Refocusing of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 49.

Table 49

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Positive Refocusing) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Positive Refocusing	Experimental group	45	15.13	2.39	1.24	N.S
	Control group	45	14.51	2.35		

N.S =Not Significant

It is clear from the table 49 that the calculated t value obtained by the pre-test scores of Positive refocusing for experimental and control groups for the total

sample is 1.24 which is not significant at 0.05 level of significance. This shows that the pre-experimental Positive Refocusing of secondary school students in experimental and control groups is almost the same. Hence the two groups are comparable in terms of the level of Positive Refocusing of secondary school students.

The mean pretest scores of Positive Refocusing of experimental and control groups of secondary school students are represented graphically in Figure 31.

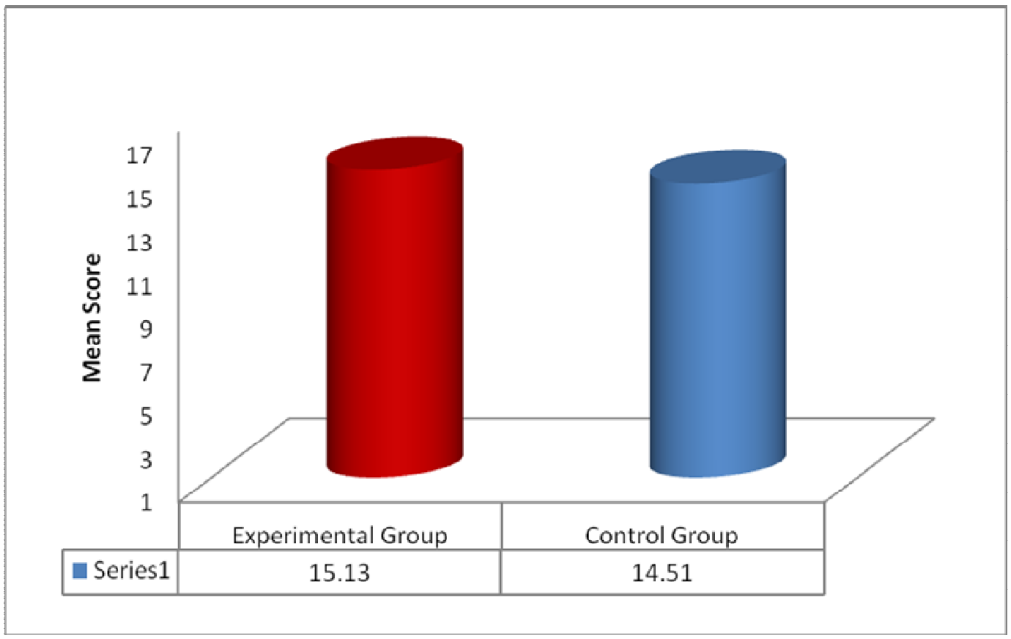


Figure 31. Comparison of the mean pretest scores of positive refocusing of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Positive Refocusing of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal in secondary school students. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Refocus on planning) of the experimental and control group

To compare the pre-experimental status for (Refocus on Planning) component of Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Refocus on Planning of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 50.

Table 50

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Refocus on Planning) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Refocus on planning	Experimental group	45	18.02	2.43	1.85	N.S.
	Control group	45	17.07	2.46		

N.S =Not Significant

It is clear from the table 50 that the calculated t value obtained by the pre-test scores of Refocus on Planning for experimental and control groups for the total sample is 1.85 which is not significant at 0.05 level of significance. This shows that the pre-experimental refocus on the planning of secondary school students in experimental and control groups are almost the same. Hence the two groups are comparable in terms of the level of Refocus on the planning of secondary school students.

The mean pretest scores of Refocus on the planning of experimental and control groups of secondary school students are represented graphically in Figure 32

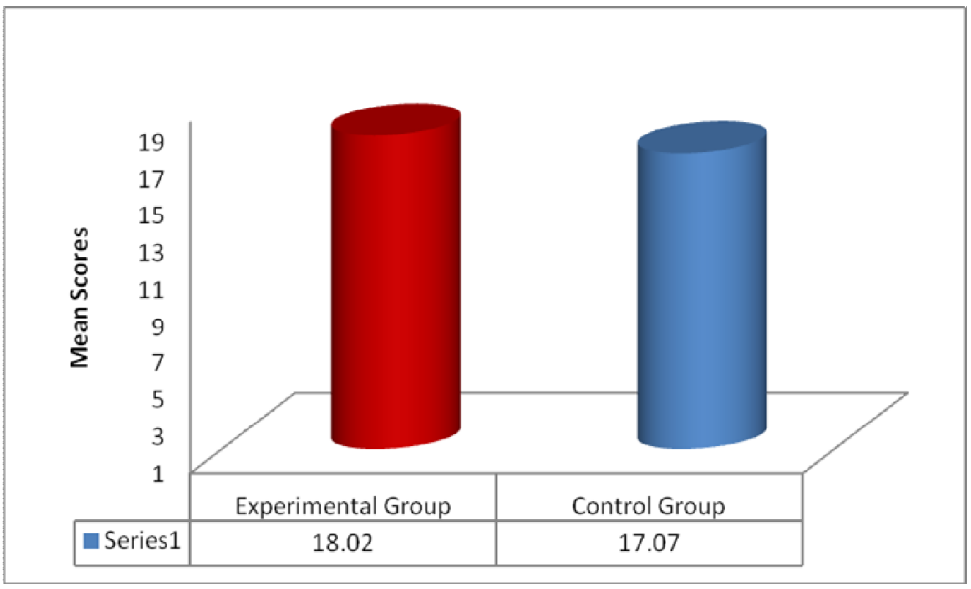


Figure 32. Comparison of the mean pretest scores of refocus on planning of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Refocus on Planning of experimental and control groups show that the mean performance of secondary school students in two groups is almost equal in secondary school students. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Positive Reappraisal) of the experimental and control group

To compare the pre-experimental status of the Positive Reappraisal of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Positive Reappraisal of the two groups were subjected to test of significance of the difference between

means. The details of the t-test for the total sample are presented in the table 51.

Table 51

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Positive Reappraisal) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Positive Re-appraisal	Experimental group	45	14.00	2.11	.96	N.S.
	Control group	45	13.56	2.27		

N.S =Not Significant

It is clear from the table 51 that the calculated t value obtained by the pre-test scores of Positive Reappraisal for experimental and control groups for the total sample is .96 which is not significant at 0.05 level of significance. This shows that the pre-experimental Positive Reappraisal of secondary school students in experimental and control groups are almost the same. Hence the two groups are comparable in terms of the level of Positive Reappraisal of secondary school students.

The mean pretest scores of the Positive Reappraisal of experimental and control groups of secondary school students are represented graphically in Figure 33

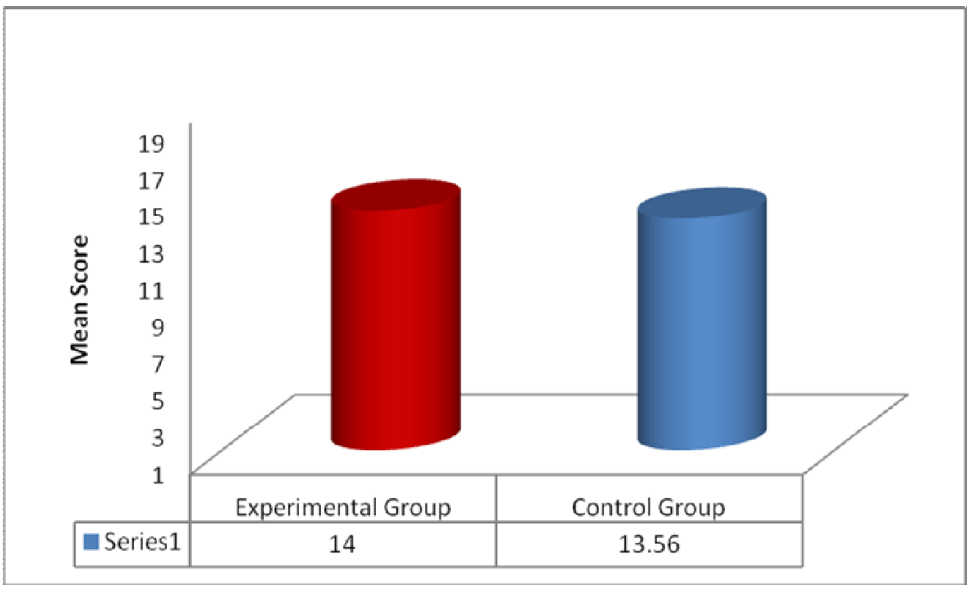


Figure 33. Comparison of the mean pretest scores of Positive Reappraisal of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Positive Reappraisal of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal in secondary school students. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Putting into Perspective) of the experimental and control group

To compare the pre-experimental status for (Putting into Perspective) component of Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Putting into Perspective of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 52.

Table 52

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Putting into Perspective) Comparison between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Putting into Perspective	Experimental group	45	16.49	3.73	.09	N.S
	Control group	45	16.96	3.13		

N.S =Not Significant

It is clear from the table 52 that the calculated t value obtained by the pre-test scores of Putting into Perspective for experimental and control groups for the total sample is .09 which is not significant at 0.05 level of significance. This shows that the pre-experimental putting into Perspective of secondary school students in experimental and control groups are almost the same. Hence the two groups are comparable in terms of the level of Putting into Perspective of secondary school students.

The mean pretest scores of Putting into Perspective of experimental and control groups of secondary school students are represented graphically in Figure 34

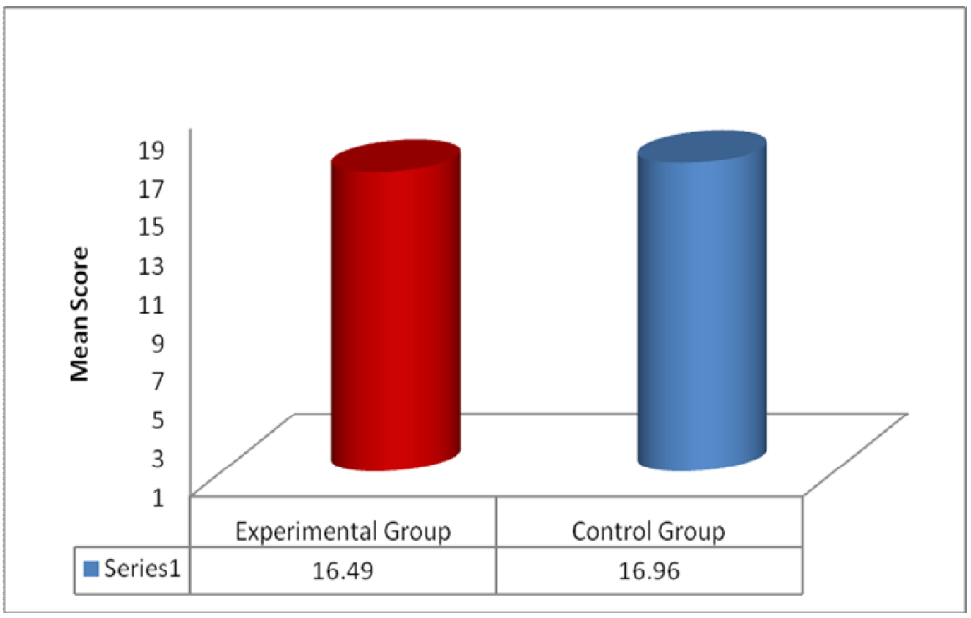


Figure 34. Comparison of the mean pretest scores of Putting into Perspective of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Positive Reappraisal of experimental and control groups shows that the mean performance of secondary school students in two groups is almost equal in secondary school students. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Catastrophizing) of the experimental and control group

To compare the pre-experimental status for (Catastrophizing) component of Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Catastrophizing of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 53.

Table 53

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Catastrophizing) Comparison between Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Catastrophizing	Experimental group	45	15.33	3.08	2.92**	0.01
	Control group	45	13.24	3.66		

**P<0.01

It is clear from the table 53 that the calculated t value obtained by the pre-test scores of Catastrophizing for experimental and control groups for the total sample is (t= 2.92, P<0.01) So there is a significant difference between mean pretest scores of Catastrophizing in secondary school between experimental group and control group at .01 levels. It can be noted that there is a significant difference in the mean pretest scores of the experimental and control group on catastrophizing. mean pretest score of experimental group is greater than the control group

The mean pretest scores of Catastrophizing of experimental and control groups of secondary school students are represented graphically in Figure 35.

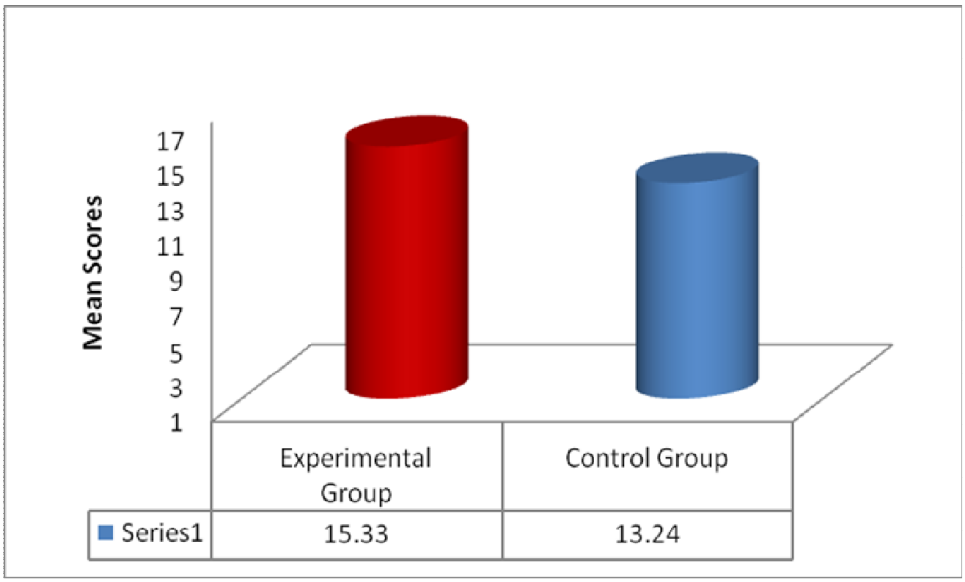


Figure 35. Comparison of the mean pretest scores of Catastrophizing of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of the Catastrophizing of experimental and control groups shows that the mean performance of secondary school students in two groups is not similar and the mean pretest score of the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of the mean pretest scores of Emotional Regulation component (Others Blame) of the experimental and control group

To compare the pre-experimental status for (Others Blame) component of Emotional Regulation of secondary school students belonging to experimental and control groups, the mean and standard deviations of pretest scores of Others Blame of the two groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 54.

Table 54

Result of Test of Significance of Difference in Mean Pretest Scores of Emotional Regulation Component (Others Blame) Comparison between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Others Blame	Experimental group	45	14.51	2.84	2.5*	0.05
	Control group	45	12.82	3.51		

*P<0.05

It is clear from the table 54 that the calculated t value obtained by the pre-test scores of Others Blame for experimental and control groups for the total sample is (t= 2.5, P<0.05) So there is a significant difference between mean pretest scores of Blaming Others in secondary school between experimental group and control group at .05 level of significance. It can be noted that there is a significant difference in the mean pretest scores of the experimental and control group on Others Blame and mean pretest score of experimental group is greater than the control group.

The mean pretest scores of Others Blame of experimental and control groups of secondary school students are represented graphically in Figure 36

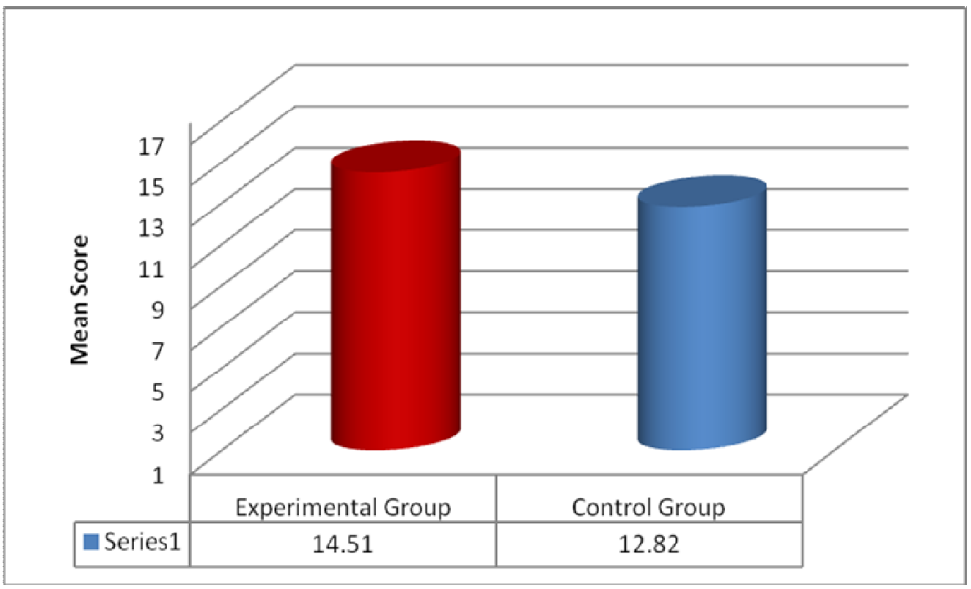


Figure 36. Comparison of the mean pretest scores of Blaming Others of experimental and control groups of secondary school students

The graphical representation of mean pretest scores of Others Blame of experimental and control groups shows that the mean performance of secondary school students in two groups are not similar and the mean pretest score of the experimental group is greater than the control group. This supports the result of mean difference analysis.

The mean difference analysis of pretest scores of Emotional Regulation and its components of secondary school students showed the following result.

The experimental and control groups do not differ significantly in the pre-experimental status of the Emotional Regulation of secondary school students for the total sample. The experimental and control groups do not differ significantly in pre-experimental status among components of emotional regulation except catastrophizing and Blaming Others.

Comparison of the mean pretest and posttest scores of Emotional Regulation in the Experimental group.

To compare the mean pretest and posttest scores of the Emotional Regulation of secondary school students belonging to the experimental group, the mean and standard deviations of the Emotional Regulation of the pretest scores and posttest scores were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 55.

Table 55

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation in Experimental Group

Control Group	Sample size	Mean	S.D.	t-value	Level of Sig.	Effect size	Cohen's Category
Pre-test	45	132.67	12.17	15.89**	0.01	1.504	Large
Post-test	45	150.98	12.19				

**P<0.01

It is clear from table 55 that the calculated t value obtained by the mean pretest scores and posttest scores of Emotional Regulation in the experimental group for the total sample is (t=15.89, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of the Emotional Regulation of secondary school students in the experimental group. The mean posttest score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Emotional Regulation of secondary school students.

Since the mean difference was found to be significant, the effect size was calculated. The value of Cohen's d is 1.50 which is greater than the limit set for the large effect in Cohen's category. It means that the Anchored Instructional Approach has a large effect in enhancing the emotional regulation of secondary school students of Kerala when compared to the Existing Method of Teaching.

The mean pretest scores and posttest scores of Emotional Regulation in an experimental group of secondary school students are represented graphically in figure 37

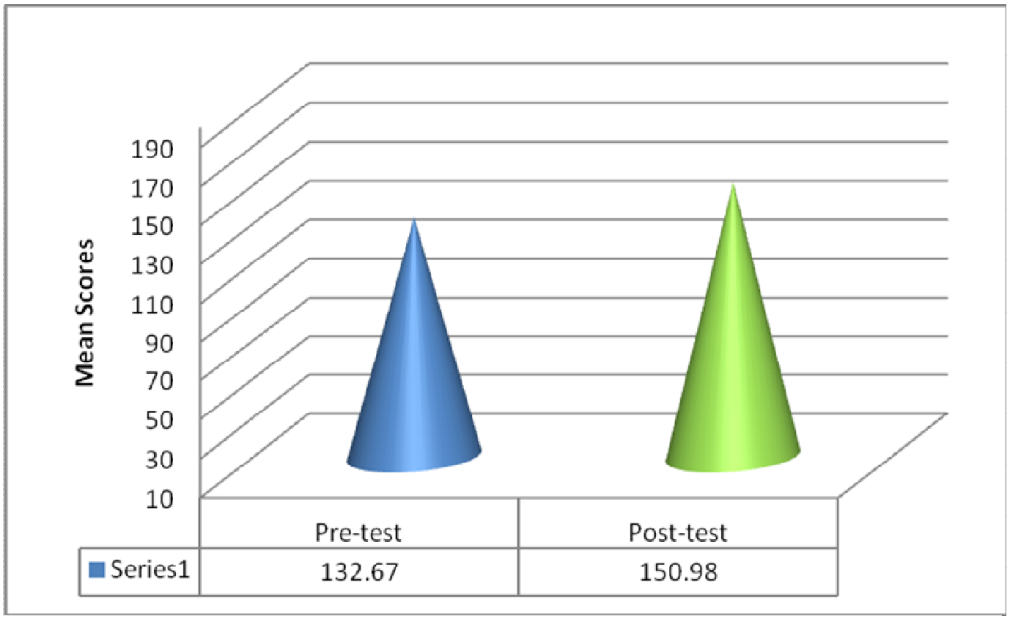


Figure 37. Comparison of the mean pretest posttest scores of Emotional Regulation in Experimental group

The graphical representation of mean pretest scores and posttest scores of Emotional Regulation in the experimental group shows that the mean performance of secondary school students in two scores is not similar and the

mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional regulation (component-wise) in the Experimental group

Below given tables show nine component-wise pretest and posttest scores comparison within the experimental group. It shows the difference in each component of Emotional Regulation before and after the treatment in the experimental group

To compare the pretest and posttest scores of Self Blame of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Self Blame of the experimental group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 56.

Table 56

Result of the Test of Significance of the Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Self Blame) in the Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Self Blame pre-test values	45	10.78	2.44	9.03**	0.01
	Self Blame post-test values	45	12.71	2.75		

**P<0.01

It is clear from table, 57 that the calculated t value obtained by the mean pretest scores and posttest scores of Self Blame in the experimental group for the total sample is ($t=9.03$, $p<0.01$). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Self Blame of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Self Blame of secondary school students.

The mean pretest scores and posttest scores of Self Blame in the experimental group of secondary school students are represented graphically in figure 38

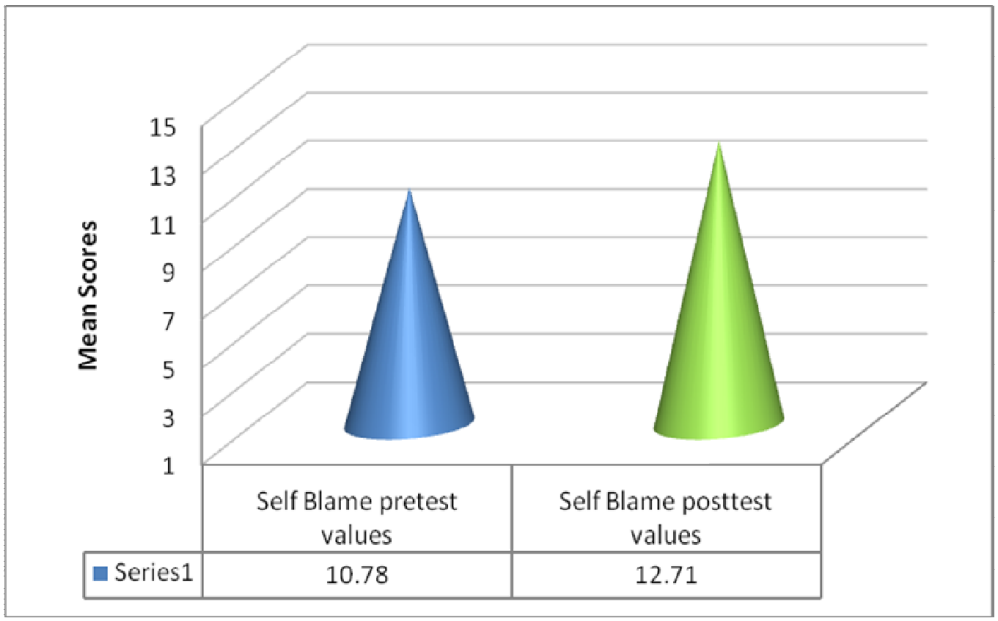


Figure 38. Comparison of the mean pretest posttest scores of Self Blame in Experimental group

The graphical representation of mean pretest scores and posttest scores of Self Blame in the experimental group shows that the mean performances of

secondary school students in two scores is not similar and mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Acceptance) in the experimental group

To compare the pretest and posttest scores of Acceptance of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Acceptance of the experimental group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 57.

Table 57

Result of the Test of Significance of the Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Acceptance) in the Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Acceptance pre-test values	45	16.56	3.29	13.81**	0.01
	Acceptance post-test values	45	18.11	3.21		

**P<0.01

It is clear from table 57 that the calculated t value obtained by the mean pretest scores and posttest scores of Acceptance in the experimental group for the total sample is (t=13.81, P<0.01) it is significant at 0.01 level. So there is

a significant difference between mean pretest and posttest scores of Acceptance of secondary school students in the experimental group. The mean posttest score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Acceptance of secondary school students.

The mean pretest scores and posttest scores of Acceptance in the experimental group of secondary school students are represented graphically in figure 39.

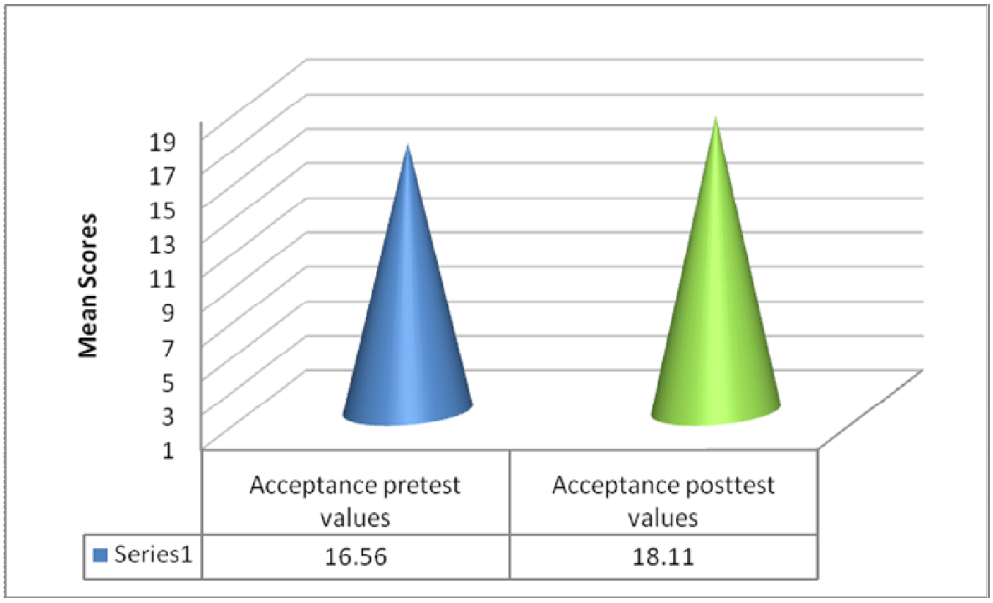


Figure 39. Comparison of the mean pretest posttest scores of Acceptance in Experimental group

The graphical representation of mean pretest scores and posttest scores of Acceptance in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Rumination) in the experimental group

To compare the pretest and posttest scores of the Rumination of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of the Rumination of the experimental group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 58.

Table 58

Result of the Test of Significance of the Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Rumination) in the Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Rumination pretest values	45	11.84	2.14	21.36**	0.01
	Rumination posttest values	45	13.82	2.21		

**P<0.01

It is clear from table 58 that the calculated t value obtained by the mean pretest scores and posttest scores of Rumination in the experimental group for the total sample is (t=21.36, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of the Rumination of secondary school students in the experimental group. The mean posttest score is greater than the mean pretest score. Hence the

Anchored Instructional Approach is effective in enhancing the level of Rumination of secondary school students.

The mean pretest scores and posttest scores of Rumination in the experimental group of secondary school students are represented graphically in figure 40

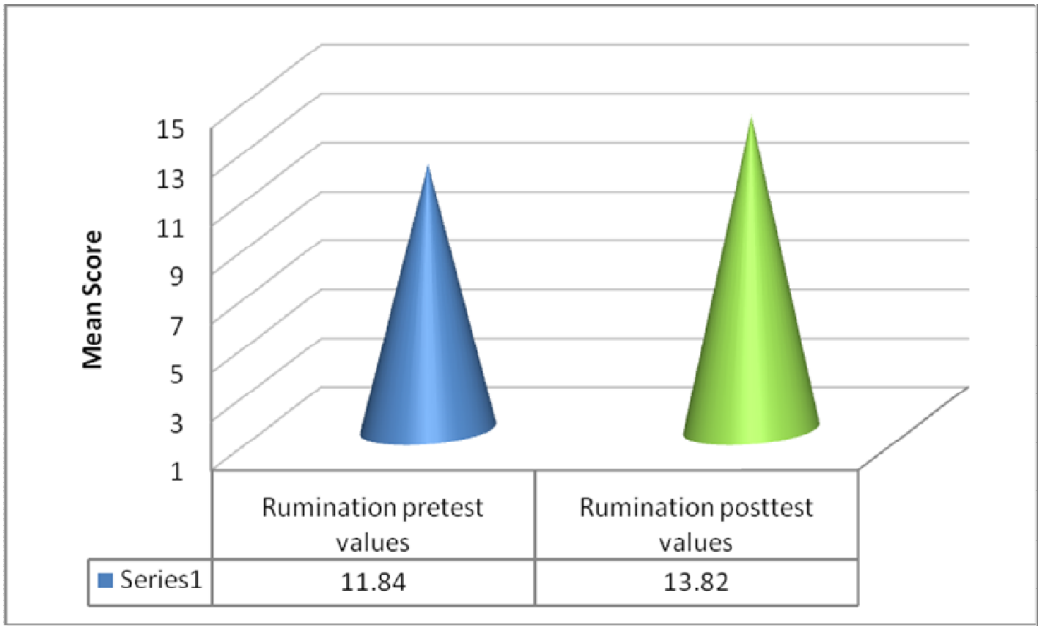


Figure 40. Comparison of the mean pretest posttest scores of Rumination in Experimental group

The graphical representation of mean pretest scores and posttest scores of Rumination in the experimental group shows that the mean performance of secondary school students in two scores is not similar and mean posttest scores of the experimental group are greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Positive Refocusing) in the experimental group

To compare the pretest and posttest scores of Positive Refocusing of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Positive Refocusing of the experimental group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 59.

Table 59

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Positive Refocusing) in Experimental Group

Group	Variable	N	Mean	S.D.	t-value	Level of Significance
Experimental group	Positive refocusing pretest values	45	15.13	2.39	3.47**	0.01
	Positive refocusing posttest values	45	16.58	3.26		

**P<0.01

It is clear from table 59 that the calculated t value obtained by the mean pretest scores and posttest scores of Positive refocusing in the experimental group for the total sample is (t= 3.47, P<0.01). it is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Positive refocusing of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive refocusing of secondary school students.

The mean pretest scores and posttest scores of Positive refocusing in the experimental group of secondary school students are represented graphically in figure 41

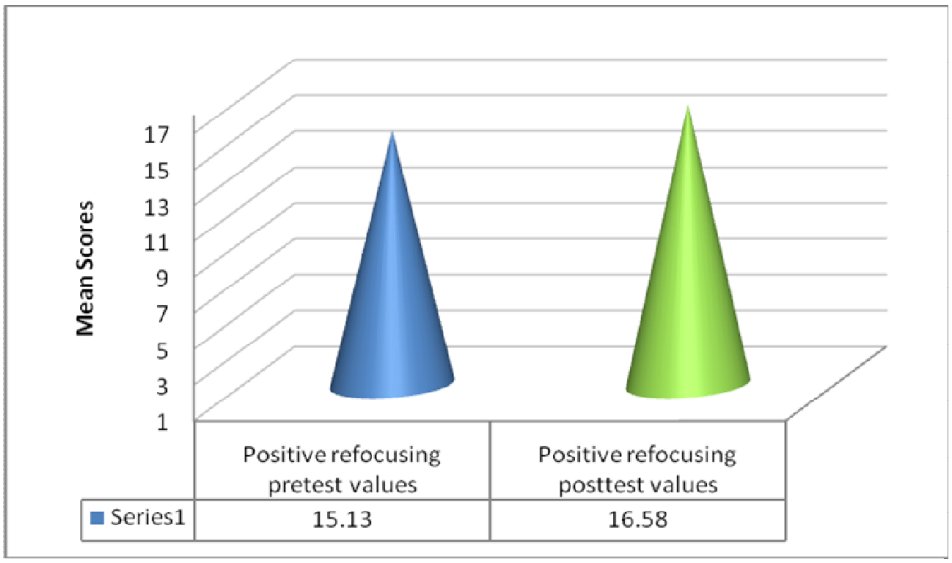


Figure 41. Comparison of the mean pretest posttest scores of Positive refocusing in Experimental group

The graphical representation of mean pretest scores and posttest scores of Positive refocusing in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Refocus on Planning) in the experimental group

To compare the pretest and posttest scores of Refocus on Planning of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Refocus on Planning of the experimental group were subjected to test of significance of

the difference between means. The details of t-test for the total sample are presented in Table 60

Table 60

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Refocus on Planning) in Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Refocus on planning pretest values	45	18.02	2.43	14.77**	0.01
	Refocus on planning posttest values	45	20.71	2.41		

**P<0.01

It is clear from table 60 that the calculated t value obtained by the mean pretest scores and posttest scores of Refocus on planning in the experimental group for the total sample is (t=14.77, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Refocus on the planning of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Refocus on the planning of secondary school students.

The mean pretest scores and posttest scores of Refocus on planning in the experimental group of secondary school students are represented graphically in figure 42

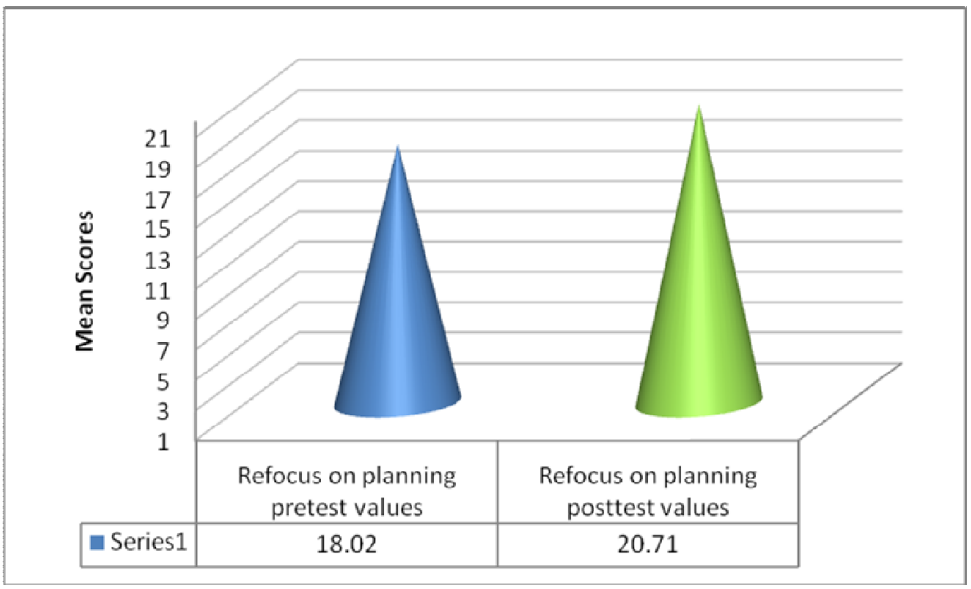


Figure 42. Comparison of the mean pretest posttest scores of Refocus on planning in Experimental group

The graphical representation of mean pretest scores and posttest scores of Refocus on planning in the experimental group shows that the mean performance of secondary school students in two scores is not similar and mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Positive Reappraisal) in the experimental group

To compare the pretest and posttest scores of Positive Reappraisal of secondary school students belonging to the experimental group, the mean and standard deviations of pretest score and posttest scores of Positive Reappraisal of the experimental group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 61.

Table 61

Result of the Test of Significance of the Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Positive Reappraisal) in the Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Positive re appraisal pretest values	45	14.00	2.11	12.69**	0.01
	Positive re appraisal posttest values	45	16.98	2.54		

**P<0.01

It is clear from table 61 that the calculated t value obtained by the mean pretest scores and posttest scores of Positive Reappraisal in the experimental group for the total sample is (t=12.69, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Positive Reappraisal of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive Reappraisal of secondary school students.

The mean pretest scores and posttest scores of Positive Reappraisal in the experimental group of secondary school students are represented graphically in figure 43

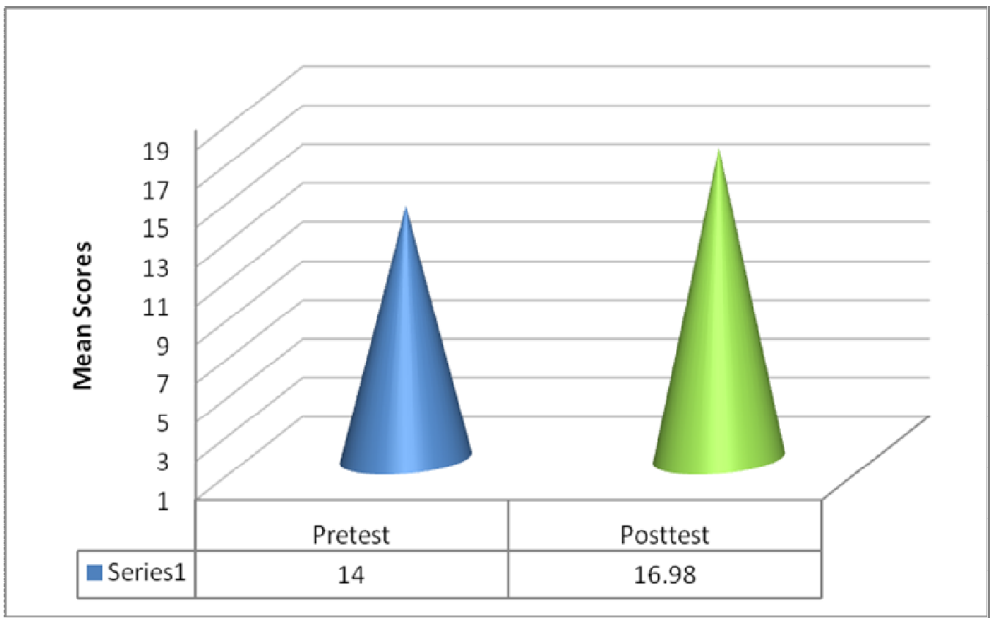


Figure 43. Comparison of the mean pretest posttest scores of Positive Reappraisal in Experimental group

The graphical representation of mean pretest scores and posttest scores of Positive Reappraisal in the experimental group shows that the mean performance of secondary school students in two scores is not similar and mean posttest scores of the experimental group are greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Putting into Perspective) in the experimental group

To compare the pretest and posttest scores of Putting into Perspective of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Putting into Perspective of the experimental group were subjected to test of significance of

the difference between means. The details of t-test for the total sample are presented in Table 62.

Table 62

Result of Test of Significance of the Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Putting into Perspective) in the Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Putting into perspective pretest values	45	16.49	3.73	9.57**	0.01
	Putting into perspective posttest values	45	18.18	3.24		

**P<0.01

It is clear from table 62 that the calculated t value obtained by the mean pretest scores and posttest scores of Putting into perspective in the experimental group for the total sample is (t= 9.57, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Putting into the perspective of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Putting into the perspective of secondary school students.

The mean pretest scores and posttest scores of Putting into perspective in the experimental group of secondary school students are represented graphically in figure 44.

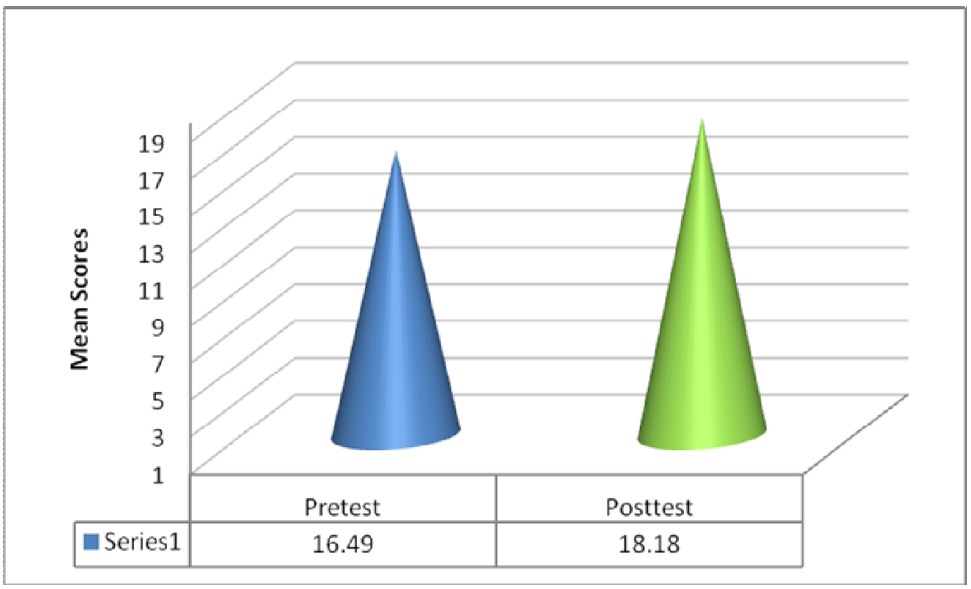


Figure 44. Comparison of the mean pretest posttest scores of Putting into perspective in Experimental group

The graphical representation of mean pretest scores and posttest scores of Putting into perspective in experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Catastrophizing) in the experimental group

To compare the pretest and posttest scores of Catastrophizing of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Catastrophizing of the experimental group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 63.

Table 63

Result of Test of Significance of the Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Catastrophizing) in the Experimental Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Experimental group	Catastrophizing pretest values	45	15.33	3.08	12.63**	0.01
	Catastrophizing posttest values	45	18.07	3.33		

**P<0.01

It is clear from table 63 that the calculated t value obtained by the mean pretest scores and posttest scores of Catastrophizing in the experimental group for the total sample is t=12.63, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Catastrophizing of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Catastrophizing of secondary school students.

The mean pretest scores and posttest scores of Catastrophizing in the experimental group of secondary school students are represented graphically in figure 45

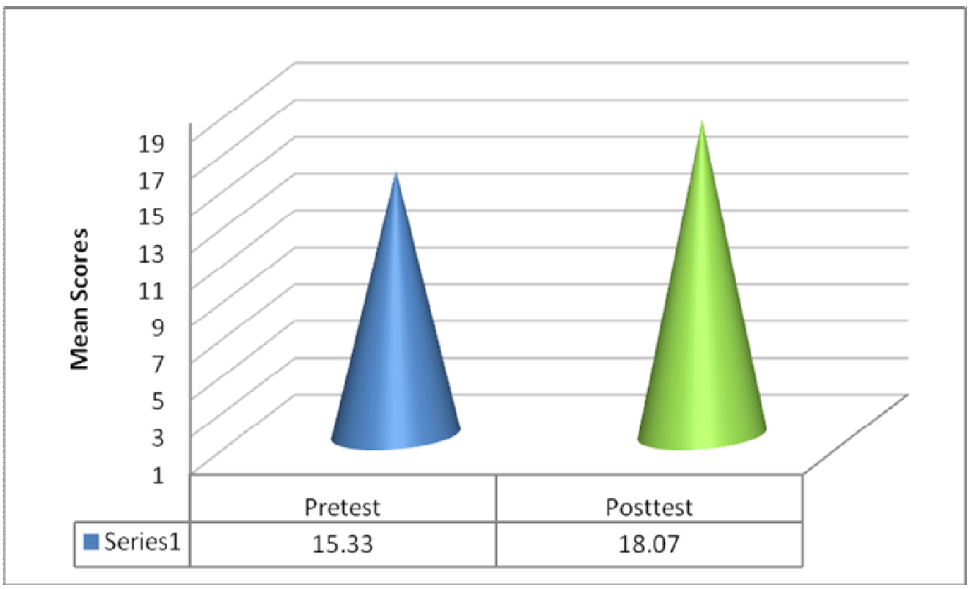


Figure 45. Comparison of the mean pretest posttest scores of Catastrophizing in Experimental group

The graphical representation of mean pretest scores and posttest scores of Catastrophizing in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Others Blame) in the experimental group

To compare the pretest and posttest scores of Blaming Others of secondary school students belonging to the experimental group, the mean and standard deviations of pretest scores and posttest scores of Blaming Others of the experimental group were subjected to test of significance of the difference between means. The details of t-test for the total sample are presented in Table 64.

Table 64

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Others Blame) in Experimental Group

Group	Variable	N	Mean	SD	t	Level of Significance
Experimental group	Blaming others pretest values	45	14.51	2.84	3.59**	0.01
	Blaming others posttest values	45	15.73	3.51		

**P<0.01

It is clear from table 64 that the calculated t value obtained by the mean pretest scores and posttest scores of Blaming others in the experimental group for the total sample is (t=3.59, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Blaming others of secondary school students in the experimental group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Blaming others of secondary school students.

The mean pretest scores and posttest scores of Blaming others in the experimental group of secondary school students are represented graphically in figure 46

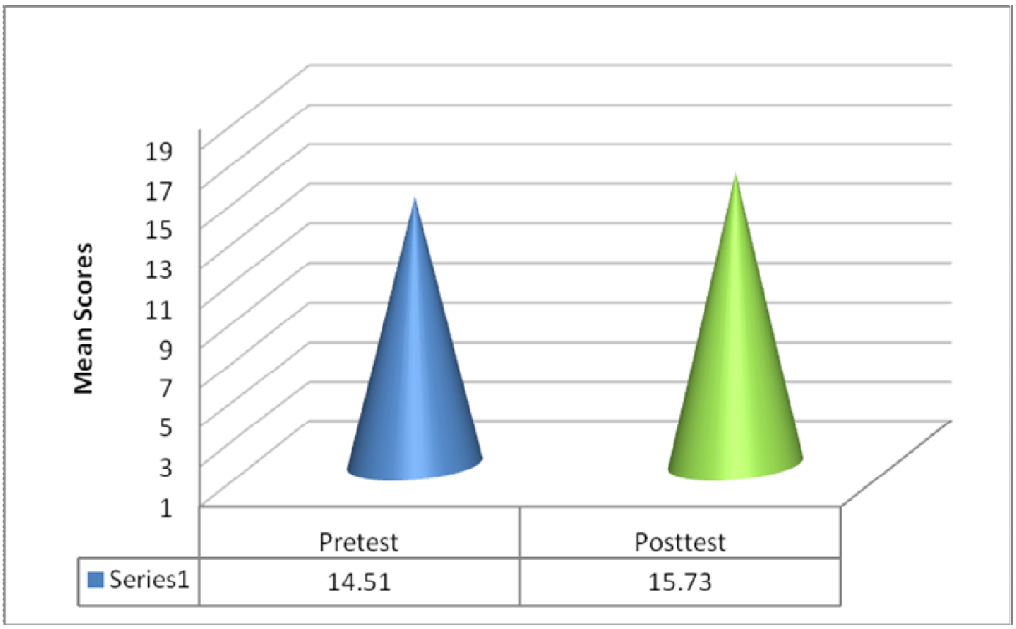


Figure 46. Comparison of the mean pretest posttest scores of Blaming others in Experimental group

The graphical representation of mean pretest scores and posttest scores of Blaming others in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

The mean difference analysis of pretest post test experimental group scores of Emotional Regulation and its components of secondary school students showed the following result.

The Pre test post test scores of experimental group is differ significantly in Emotional Regulation of secondary school students for the total sample and for all components.

Comparison of the mean pretest and posttest scores of Emotional Regulation (component-wise) in the Control group

Below given table shows nine component-wise pretests and posttest score comparison within the control group. It shows the difference in each component of Emotional Regulation before the treatment in the control group

Comparison of the mean pretest and posttest scores of Emotional Regulation in control group.

To compare the pretest and posttest scores of the Emotional Regulation of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of the Emotional Regulation of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 65.

Table 65

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation in Control Group

Control Group	Sample size	Mean	S.D.	t-value	Level of Significance	Effect size	Cohen's category
Pre-test	45	128.16	10.97	12.89**	0.01	1.354	Large
Post-test	45	142.96	10.87				

**P<0.01

It is clear from the table 65 that the calculated t value obtained by the mean pretest scores and posttest scores of Emotional Regulation in the control group for the total sample is (t=12.89, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest

scores of the Emotional Regulation of secondary school students in the control group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Emotional Regulation of secondary school students.

Since the mean difference was found to be significant, the effect size was calculated. The value of Cohen's d is 1.34 which is greater than the limit set for the large effect in Cohen's category. It means that the Anchored Instructional Approach has a large effect in enhancing the emotional regulation of secondary school students of Kerala when compared to the Existing Method of Teaching.

The mean pretest scores and posttest scores of Emotional Regulation in the control group of secondary school students are represented graphically in figure 47

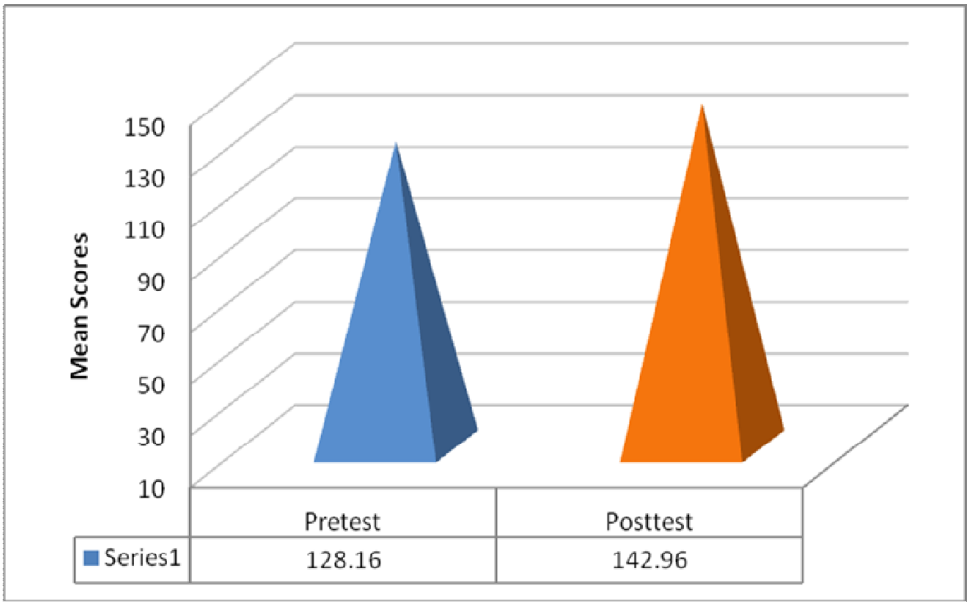


Figure 47. Comparison of the mean pretest and posttest scores of Emotional Regulation in control group

The graphical representation of mean pretest scores and posttest scores of Emotional Regulation in the experimental group shows that the mean performances of secondary school students in two scores is not similar and mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Self Blame) in the control group

To compare the pretest and posttest scores of Self Blame of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of Blaming Others of the control group were subjected to test of significance of the difference between means. The details of t-test for the total sample are presented in Table 66

Table 66

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Self Blame) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control Group	Self Blame pretest values	45	10.98	1.83	2.64**	0.01
	Self Blame posttest values	45	11.69	1.95		

**P<0.01

It is clear from table 66 that the calculated t value obtained by the mean pretest scores and posttest scores of Self Blame in the control group for the total sample is (t=2.64, P<0.01). It is significant at the 0.01 level. So there is a

significant difference between mean pretest and posttest scores of Self Blame of secondary school students in the control group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Self Blame of secondary school students.

The mean pretest scores and posttest scores of Self Blame in the control group of secondary school students are represented graphically in figure 48

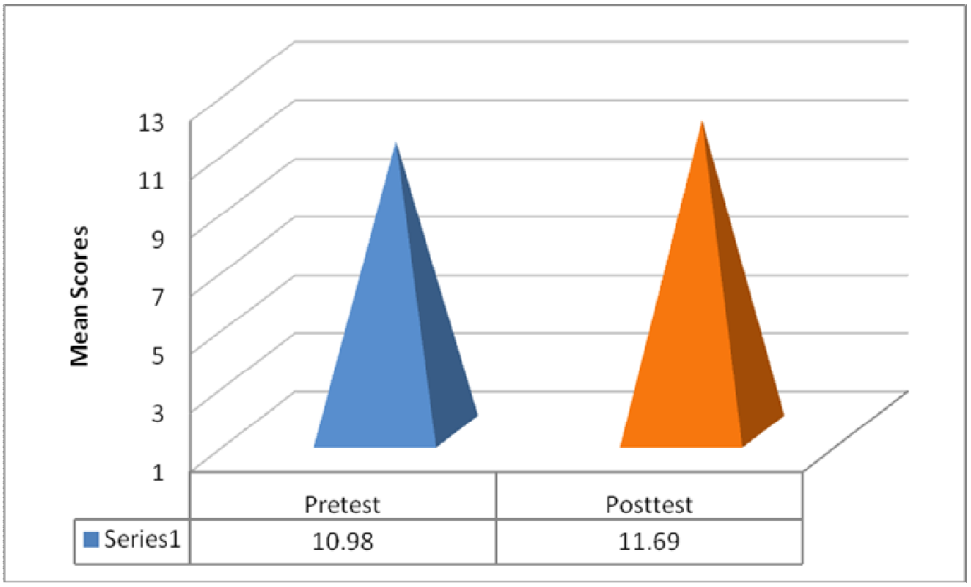


Figure 48. Comparison of the mean pretest and posttest scores of Self Blame in control group

The graphical representation of mean pretest scores and posttest scores of Self Blame in the experimental group shows that the mean performance of secondary school students in two scores is not similar and the mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Acceptance) in the control group

To compare the pretest and posttest scores of Acceptance of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of Acceptance of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 67.

Table 67

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation component (Acceptance) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control group	Acceptance pretest values	45	16.80	2.59	-.35	N.S
	Acceptance posttest values	45	16.67	3.39		

N.S =Not Significant

It is clear from table 67 that the calculated t value obtained by the mean pretest scores and posttest scores of Acceptance in the control group for the total sample is (t=-.35). It is not significant at 0.05 level. So there is no significant difference between mean pretest and posttest scores of Acceptance of secondary school students in the control group. The mean pretest score and posttest scores are almost the same.

The mean pretest scores and posttest scores of Acceptance in the control group of secondary school students are represented graphically in figure 49

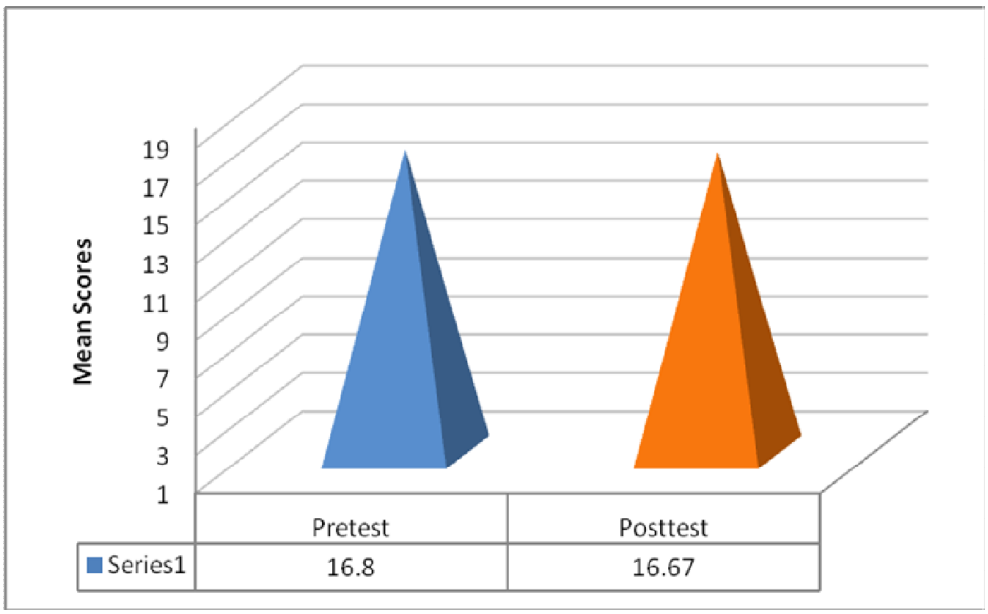


Figure 49. Comparison of the mean pretest and posttest scores of Acceptance in control group

The graphical representation of mean pretest scores and posttest scores of Acceptance in the experimental group shows that the mean performances of secondary school students in two scores are similar. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Rumination) in the control group.

To compare the pretest and posttest scores of the Rumination of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of the Rumination of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 68.

Table 68

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Rumination) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control group	Rumination pretest values	45	12.60	1.94	.36	N.S
	Rumination posttest values	45	12.73	2.91		

N.S =Not Significant

It is clear from the table 68 that the calculated t value obtained by the mean pretest scores and posttest scores of Rumination in the control group for the total sample is (t=.36). It is not significant at 0.05 level. So there is no significant difference between mean pretest and posttest scores of the Rumination of secondary school students in the control group. The mean pretest score and posttest scores are almost the same.

The mean pretest scores and posttest scores of Rumination in the control group of secondary school students are represented graphically in figure 50

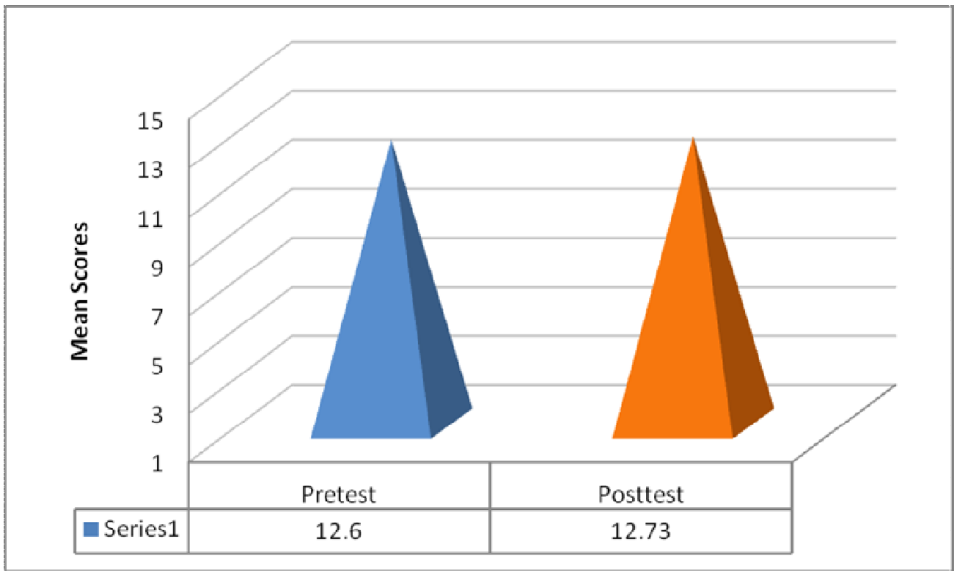


Figure 50. Comparison of the mean pretest and posttest scores of Rumination in control group

The graphical representation of mean pretest scores and posttest scores of Rumination in the experimental group shows that the mean performances of secondary school students in two scores are similar. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Positive Refocusing) in the control group.

To compare the pretest and posttest scores of Positive Refocusing of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of Positive Refocusing of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 69.

Table 69

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Positive Refocusing) in Control Group

Group	Variable	N	Mean	SD	t	Level of Significance
Control group	Positive refocusing pretest values	45	14.51	2.35	7.39**	0.01
	Positive refocusing posttest values	45	15.38	2.33		

**P<0.01

It is clear from table 69 that the calculated t value obtained by the mean pretest scores and posttest scores of Positive refocusing in the control group for the total sample is (t=7.39, P<0.01). It is significant at 0.01 level. So there

is a significant difference between mean pretest and posttest scores of Positive refocusing secondary school students in the control group. The mean posttest score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive refocusing of secondary school students.

The mean pretest scores and posttest scores of Positive refocusing in the control group of secondary school students are represented graphically in figure 51

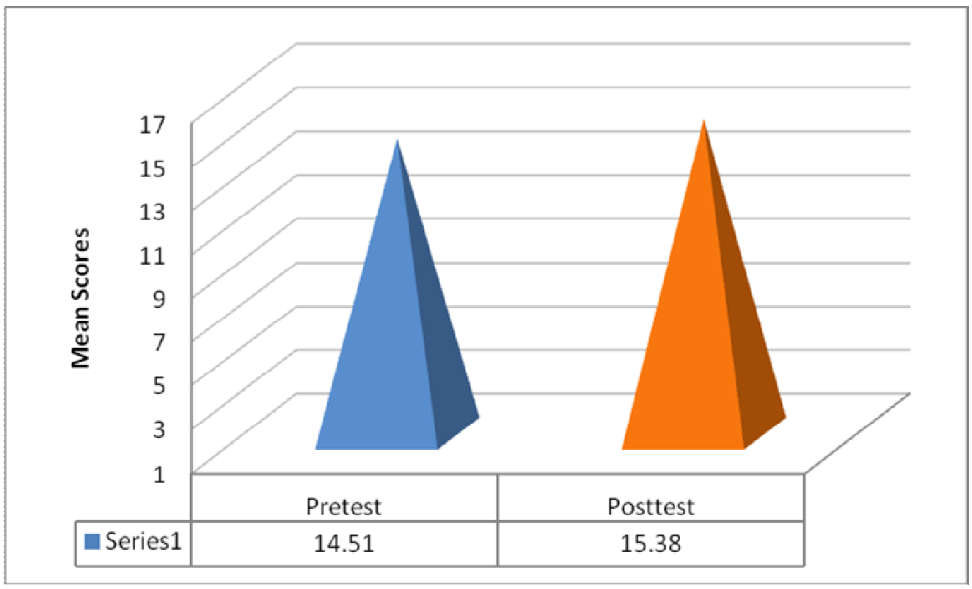


Figure 51. Comparison of the mean pretest and posttest scores of Positive refocusing in control group

The graphical representation of mean pretest scores and posttest scores of Positive refocusing in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Refocus on Planning) in the control group.

To compare the pretest and posttest scores of Refocus on Planning of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of Refocus on Planning of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in table 70.

Table 70

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Refocus on Planning) in Control Group

Group	Variable	N	Mean	SD	t	Level of Significance
Control group	Refocus on planning pretest values	45	17.07	2.46	22.08**	0.01
	Refocus on planning posttest values	45	19.64	2.62		

**P<0.01

It is clear from table 70 that the calculated t value obtained by the mean pretest scores and posttest scores of Refocus on planning in a control group for the total sample is t=22.08, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Refocus on the planning of secondary school students in the control group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Refocus on the planning of secondary school students.

The mean pretest scores and posttest scores of Refocus on planning in a control group of secondary school students are represented graphically in figure 52

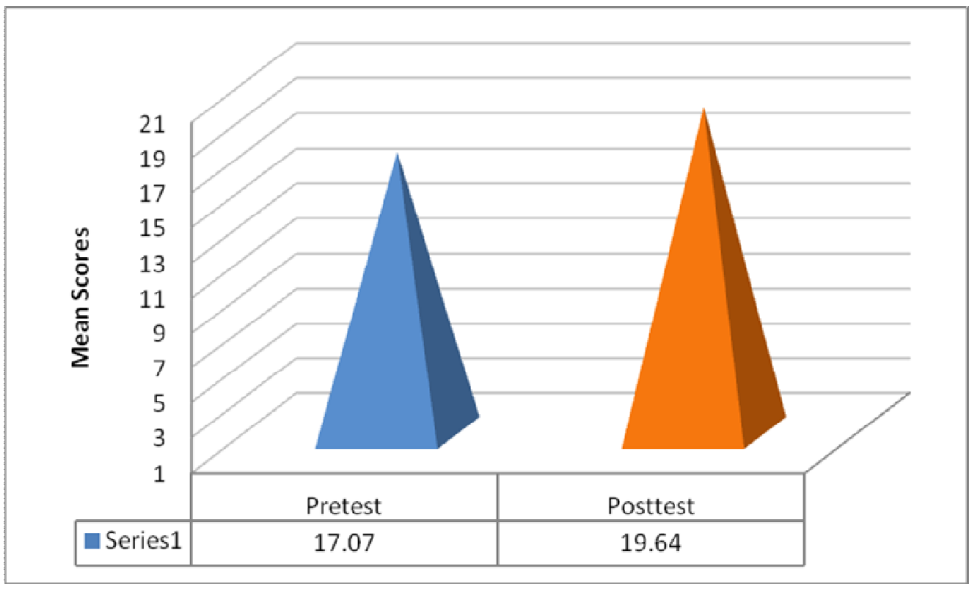


Figure 52. Comparison of the mean pretest and posttest scores of Refocus on planning in control group

The graphical representation of mean pretest scores and posttest scores of Refocus on planning in the experimental group shows that the mean performance of secondary school students in two scores is not similar and mean posttest scores of the experimental group are greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Positive Reappraisal) in the control group

To compare the pretest and posttest scores of Positive Reappraisal of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of Positive

Reappraisal of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 71.

Table 71

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Positive Reappraisal) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control group	Positive re appraisal pretest values	45	13.56	2.27	9.88**	0.01
	Positive re appraisal posttest values	45	15.98	2.13		

**P<0.01

It is clear from table 71 that the calculated t value obtained by the mean pretest scores and posttest scores of Positive reappraisal in the control group for the total sample is (t=9.88, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Positive reappraisal of secondary school students in the control group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive reappraisal of secondary school students.

The mean pretest scores and posttest scores of Positive reappraisal in a control group of secondary school students are represented graphically in figure 53.

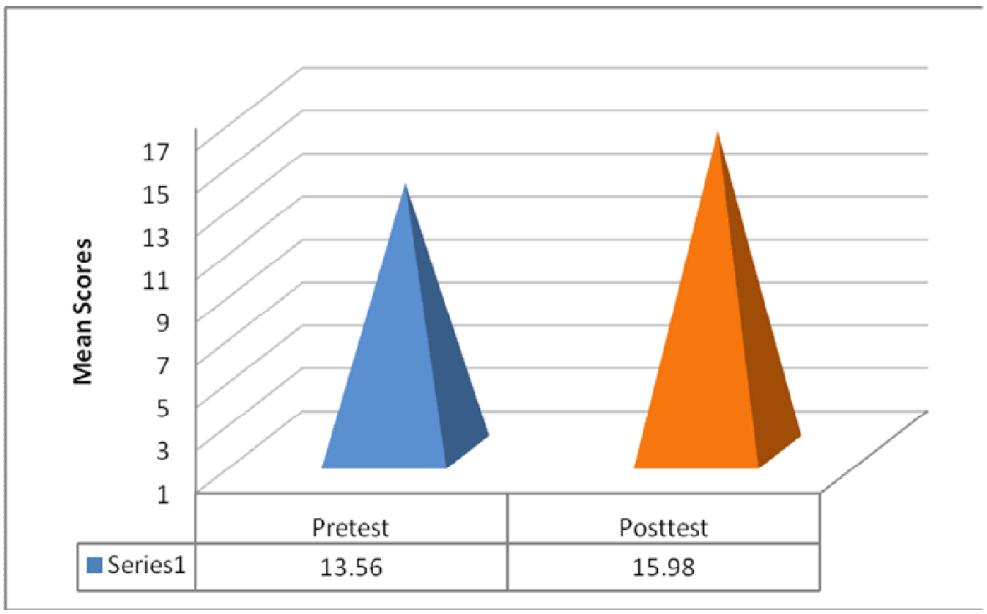


Figure 53. Comparison of the mean pretest and posttest scores of Positive re appraisal in control group

The graphical representation of mean pretest scores and posttest scores of Positive re-appraisal in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Putting into Perspective) in the control group.

To compare the pretest and posttest scores of Putting into Perspective of secondary school students belonging to the control group, the mean and standard deviations of pretest-posttest scores of Putting into Perspective of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 72.

Table 72

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Putting into Perspective) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control group	Putting into perspective pretest values	45	16.55	3.13	12.52**	0.01
	Putting into perspective posttest values	45	19.20	2.99		

**P<0.01

It is clear from table 72 that the calculated t value obtained by the mean pretest scores and posttest scores of Putting into perspective in the control group for the total sample is (t=12.52, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Putting into the perspective of secondary school students in the control group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Putting into the perspective of secondary school students.

The mean pretest scores and posttest scores of Putting into perspective in the control group of secondary school students are represented graphically in figure 54

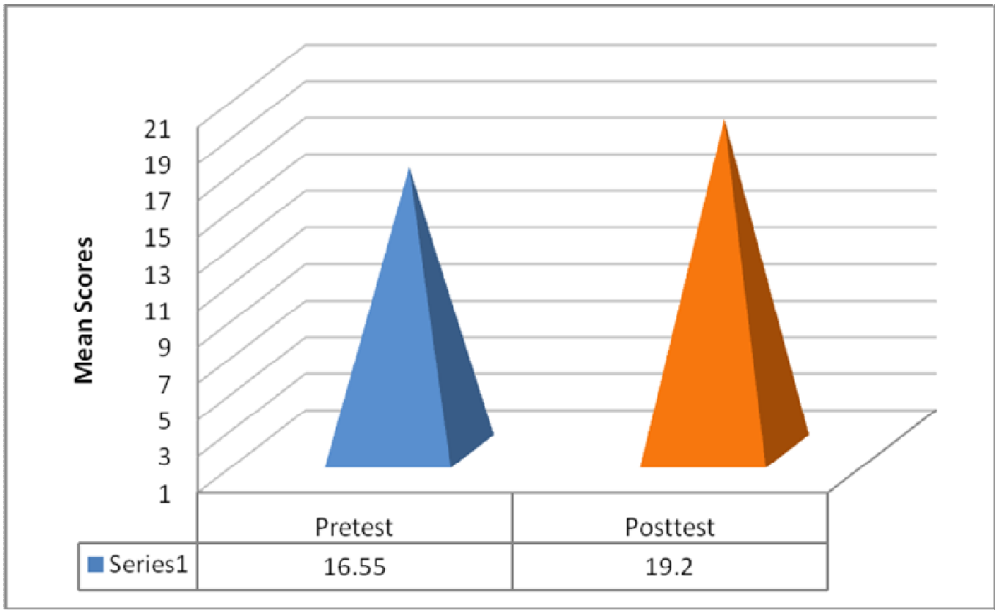


Figure 54. Comparison of the mean pretest and posttest scores of Putting into perspective in control group

The graphical representation of mean pretest scores and posttest scores of Putting into perspective in experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Catastrophizing) in the control group

To compare the pretest and posttest scores of Catastrophizing of secondary school students belonging to the control group, the mean and standard deviations of pretest scores and posttest scores of Catastrophizing of the control group were subjected to test of significance of the difference between means. The details of t-test for the total sample are presented in Table 73.

Table 73

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Catastrophizing) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control group	Catastrophizing pretest values	45	13.24	3.66	9.79**	0.01
	Catastrophizing posttest values	45	16.53	3.75		

**P<0.01

It is clear from table 73 that the calculated t value obtained by the mean pretest scores and posttest scores of Catastrophizing in the control group for the total sample is (t=9.79, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of Catastrophizing of secondary school students in the control group. The mean posttest score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of Catastrophizing of secondary school students.

The mean pretest scores and posttest scores of Catastrophizing in the control group of secondary school students are represented graphically in figure 55

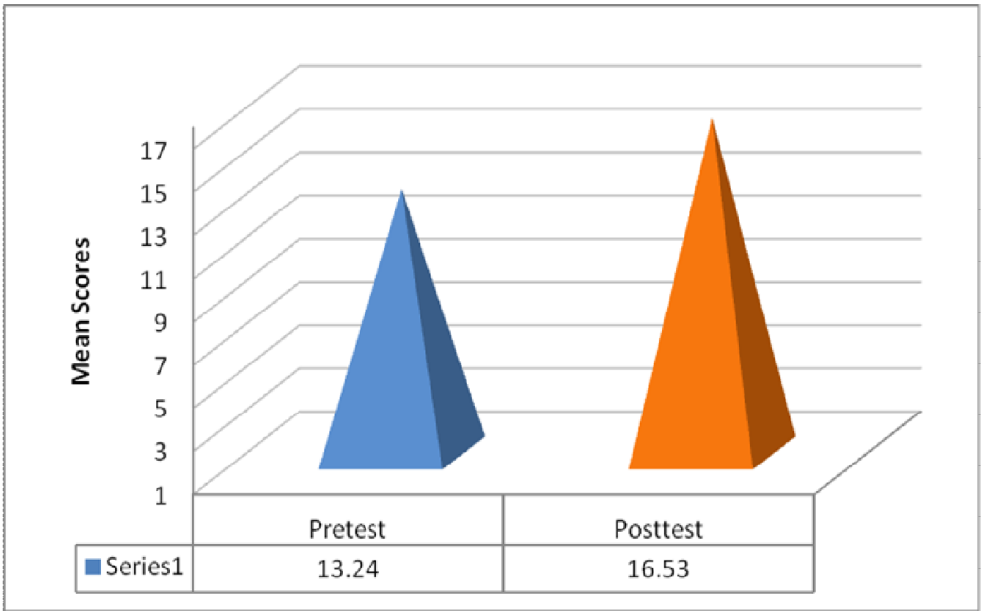


Figure 55. Comparison of the mean pretest and posttest scores of Catastrophizing in control group

The graphical representation of mean pretest scores and posttest scores of Catastrophizing in the experimental group shows that the mean performance of secondary school students in two scores are not similar and mean posttest scores of experimental group is greater than the pretest score. This supports the result of mean difference analysis

Comparison of the mean pretest and posttest scores of Emotional Regulation component (Others Blame) in the control group

To compare the pretest and posttest scores of Others Blame of secondary school students belonging to the control group, the mean and standard deviations of pretest-posttest scores of Others Blame of the control group were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 74.

Table 74

Result of Test of Significance of Difference in Mean Pretest and Posttest Scores of Emotional Regulation Component (Others Blame) in Control Group

Group	Variable	N	Mean	SD	t-value	Level of Significance
Control group	Blaming others pretest values	45	12.82	3.51	4.31**	0.01
	Blaming others posttest values	45	14.22	3.64		

**P<0.01

It is clear from table 74 that the calculated t value obtained by the mean pretest scores and posttest scores of blaming others in the control group for the total sample is (t=4.31, P<0.01). It is significant at 0.01 level. So there is a significant difference between mean pretest and posttest scores of blaming others of secondary school students in the control group. The mean post-test score is greater than the mean pretest score. Hence the Anchored Instructional Approach is effective in enhancing the level of blaming others of secondary school students.

The mean pretest scores and posttest scores of blaming others in a control group of secondary school students are represented graphically in figure 56.

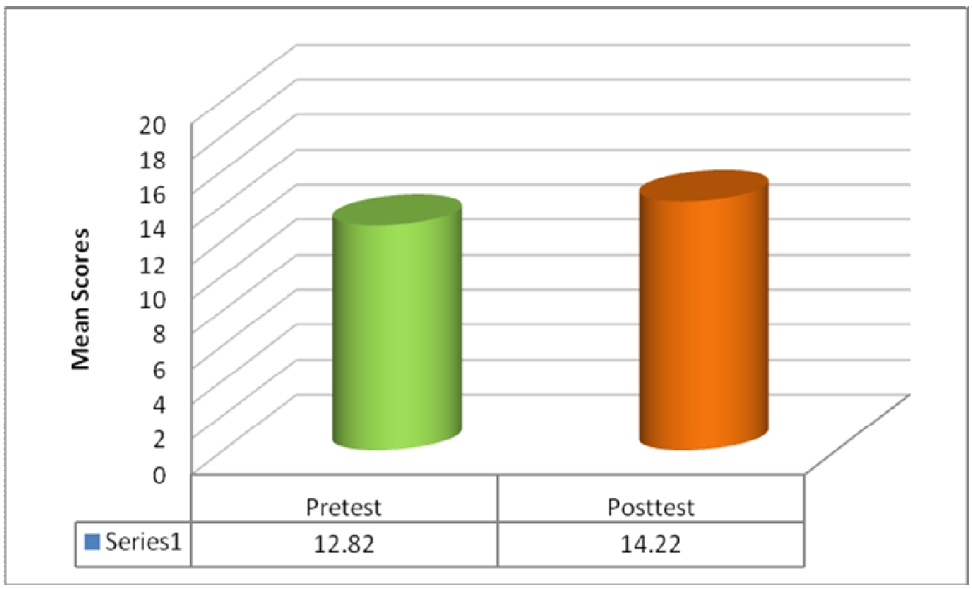


Figure 56. Comparison of the mean pretest and posttest scores of Others Blame in control group

The graphical representation of mean pretest scores and posttest scores of Blaming others in the experimental group shows that the mean performance of secondary school students in two scores is not similar and mean posttest scores of the experimental group is greater than the pretest score. This supports the result of mean difference analysis.

The mean difference analysis of pretest post test scores for the control group of Emotional Regulation and its components of secondary school students showed the following results.

The Pre test post test scores of control group is differ significantly in Emotional Regulation of secondary school students for the total sample and for all components except Acceptance and Rumination.

Comparison of the Mean Posttest Scores of Emotional Regulation between Experimental and Control Group

The analysis whether the emotional regulation of the control group and the experimental group have progressed after teaching with Anchored Instruction and with Existing Method of Teaching is given in the table below.

Comparison of the mean posttest scores of Emotional Regulation between the experimental and control group.

To compare the posttest scores of Process Skills in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Process Skills in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 75.

Table 75

Result of Test of Significance of Difference in Mean Posttest Scores of Emotional Regulation between Experimental and Control Group

Groups Compared	N	Mean	S.D.	t-value	Level of Significance	Effect Size	Cohen's Category
Experimental Group	45	150.98	12.19	3.29**	0.01	0.694	Large
Control Group	45	142.96	10.87				

**P<0.01

It is clear from table 75 that the calculated t value obtained by the mean posttest scores of Emotional Regulation in the experimental and control group for the total sample is (t=3.29, P<0.01). It is significant at the 0.01 level. So

there is a significant difference between mean posttest scores of the Emotional Regulation of secondary school students in experimental and control groups. The mean scores of the experimental group are greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Emotional Regulation of secondary school students.

Since the mean difference was found to be significant, the effect size was calculated. The value of Cohen's d is 0.69 which is greater than the limit set for the medium effect in Cohen's category. It means that the Anchored Instructional Approach has a medium effect in enhancing the emotional regulation of secondary school students of Kerala when compared to the Existing Method of Teaching.

The mean posttest scores of Emotional Regulation in the experimental and control group of secondary school students are represented graphically in figure 57.

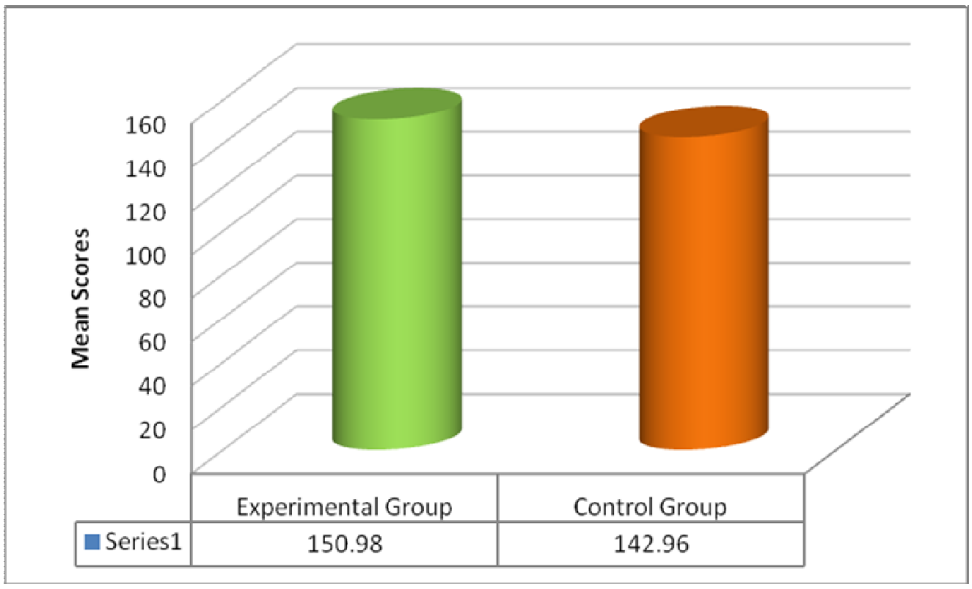


Figure 57. Comparison of the mean posttest scores of Emotional Regulation in Experimental and control group

The graphical representation of mean posttest scores of Emotional Regulation in the experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in the mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Self Blame) in the experimental and control group.

To compare the posttest scores of Self Blame in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of experimental and control groups of Self Blame between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in table 76.

Table 76

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Self Blame) in Experimental and Control Group

Variable	Group	N	Mean	S.D.	t	Level of Significance
Self Blame posttest values	Experimental group	45	12.71	2.75	2.03*	0.05
	Control group	45	11.68	1.95		

*P<0.05

It is clear from table 76 that the calculated t value obtained by the mean posttest scores of Self Blame in the experimental and control group for the

total sample is (t=2.03, P<0.05). It is significant at 0.05 level. So there is a significant difference between mean posttest scores of Self Blame of secondary school students in experimental and control groups. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Self Blame of secondary school students.

The mean posttest scores of Self Blame in the experimental and control group of secondary school students are represented graphically in figure 58

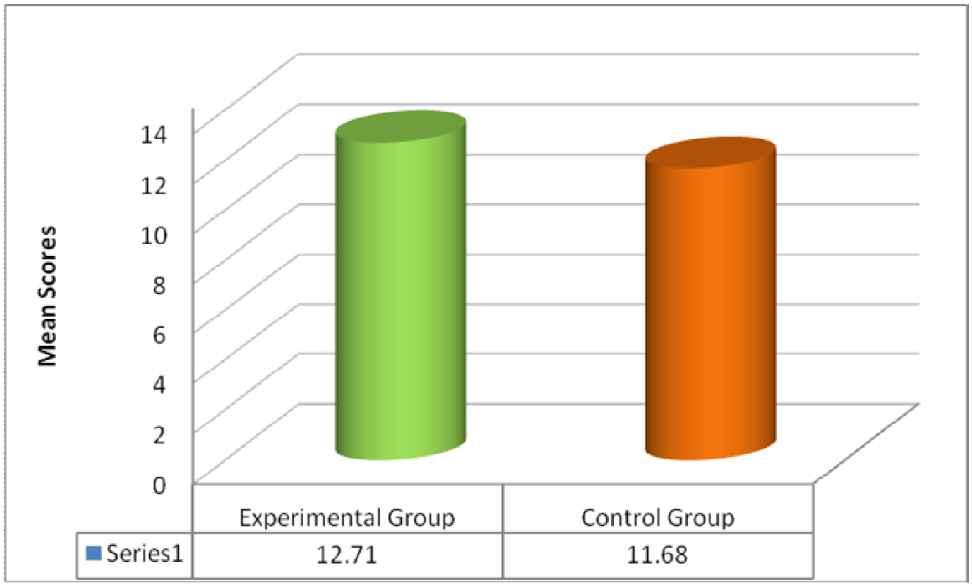


Figure 58. Comparison of the mean posttest scores of Self Blame in Experimental and control group

The graphical representation of mean posttest scores of Self Blame in the experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in mean score experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Acceptance) in the experimental and control group.

To compare the posttest scores of Acceptance in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Acceptance between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 77.

Table 77

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Acceptance) in Experimental and Control Group

Variable	Group	N	Mean	S.D.	t	Level of Significance
Acceptance posttest values	Experimental group	45	18.11	3.21	2.07*	0.05
	Control group	45	16.67	3.39		

*P<0.05

It is clear from table 77 that the calculated t value obtained by the mean posttest scores of Acceptance in the experimental and control group for the total sample is (t=2.07, P<0.05) it is significant at 0.05 level. So there is a significant difference between mean posttest scores of Acceptance of secondary school students in the experimental and control group. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Acceptance of secondary school students.

The mean posttest scores of Acceptance in the experimental and control group of secondary school students are represented graphically in figure 59

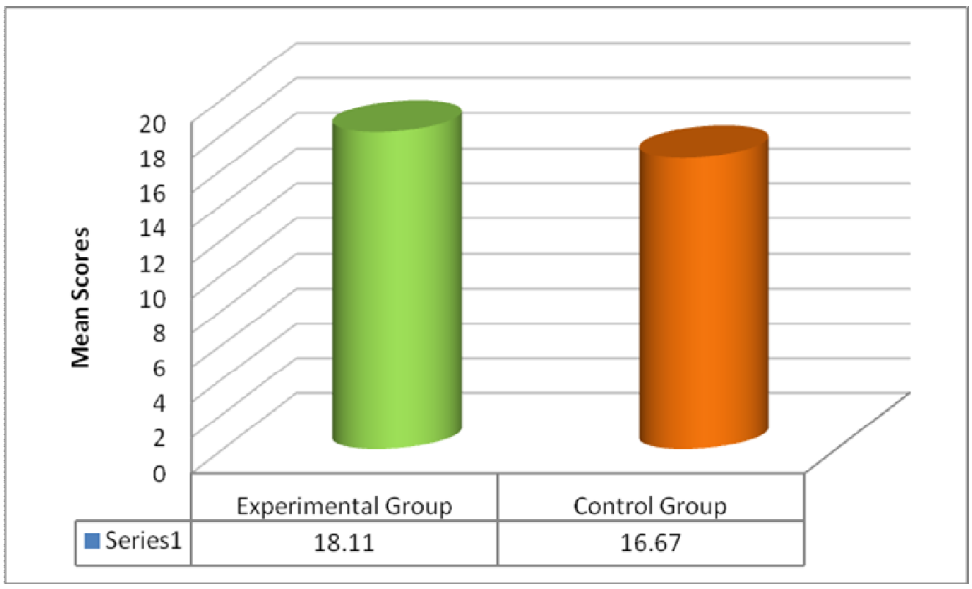


Figure 59. Comparison of the mean posttest scores of Acceptance in Experimental and control group

The graphical representation of mean posttest scores of Acceptance in experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in mean score experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Rumination) in the experimental and control group.

To compare the posttest scores of Rumination in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Rumination between

experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in table 78.

Table 78

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Rumination) in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Rumination posttest values	Experimental group	45	13.82	2.21	1.99*	0.05
	Control group	45	12.73	2.91		

*P<0.05

It is clear from table 78 that the calculated t value obtained by the mean posttest scores of Rumination in the experimental and control group for the total sample is (t=1.99, P<0.05) it is significant at 0.05 level. So there is a significant difference between mean posttest scores of the Rumination of secondary school students in the experimental and control group. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Rumination of secondary school students.

The mean posttest scores of Rumination in the experimental and control group of secondary school students are represented graphically in figure 60.

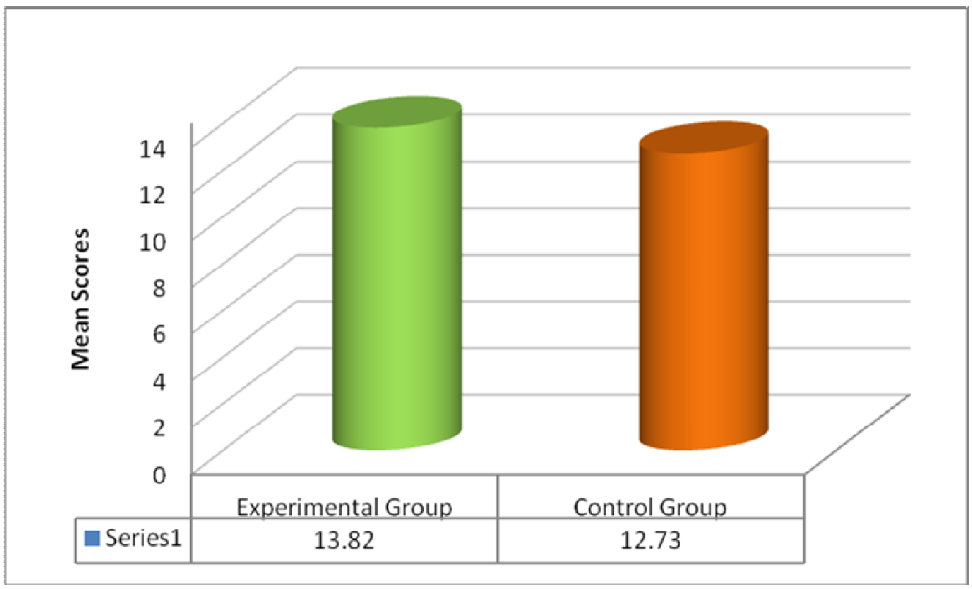


Figure 60. Comparison of the mean posttest scores of Rumination in Experimental and control group

The graphical representation of mean posttest scores of Rumination in experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in mean score experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Positive Refocusing) in the experimental and control group.

To compare the posttest scores of Positive Refocusing in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Positive Refocusing between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 79.

Table 79

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Positive Refocusing) in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Positive refocusing posttest values	Experimental group	45	16.58	3.26	2.01*	0.05
	Control group	45	15.38	2.33		

*P<0.05

It is clear from table 79 that the calculated t value obtained by the mean posttest scores of Positive refocusing in the experimental and control group for the total sample is(t= 2.01, P<0.05) it is significant at 0.05 level. So there is a significant difference between mean posttest scores of Positive refocusing of secondary school students in the experimental and control group. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive refocusing of secondary school students.

The mean posttest scores of Positive refocusing in the experimental and control group of secondary school students are represented graphically in figure 61.

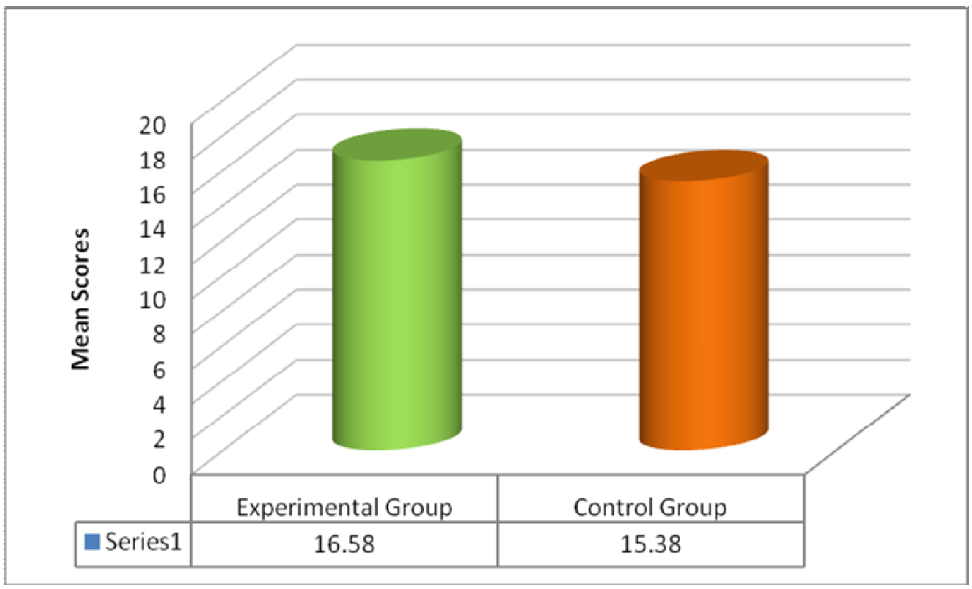


Figure 61. Comparison of the mean posttest scores of Positive refocusing in Experimental and control group

The graphical representation of mean posttest scores of Positive refocusing in experimental and control group shows that the mean performance of secondary school students in two groups are not similar and in mean score experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Refocus on Planning) in the experimental and control group.

To compare the posttest scores of Refocus on Planning in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Refocus on Planning between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 80.

Table 80

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Refocus on Planning) in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Refocus on planning posttest values	Experimental group	45	20.71	2.41	2.01*	0.05
	Control group	45	19.64	2.62		

*P<0.05

It is clear from the table 80 that the calculated t value obtained by the mean posttest scores of Refocus on planning in the experimental and control group for the total sample is (t= 2.01, P<0.05). It is significant at 0.05 level. So there is a significant difference between mean posttest scores of Refocus on the planning of secondary school students in the experimental and control group. The mean scores of the experimental group are greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Refocus on the planning of secondary school students.

The mean posttest scores of Refocus on planning in the experimental and control group of secondary school students are represented graphically in figure 62.

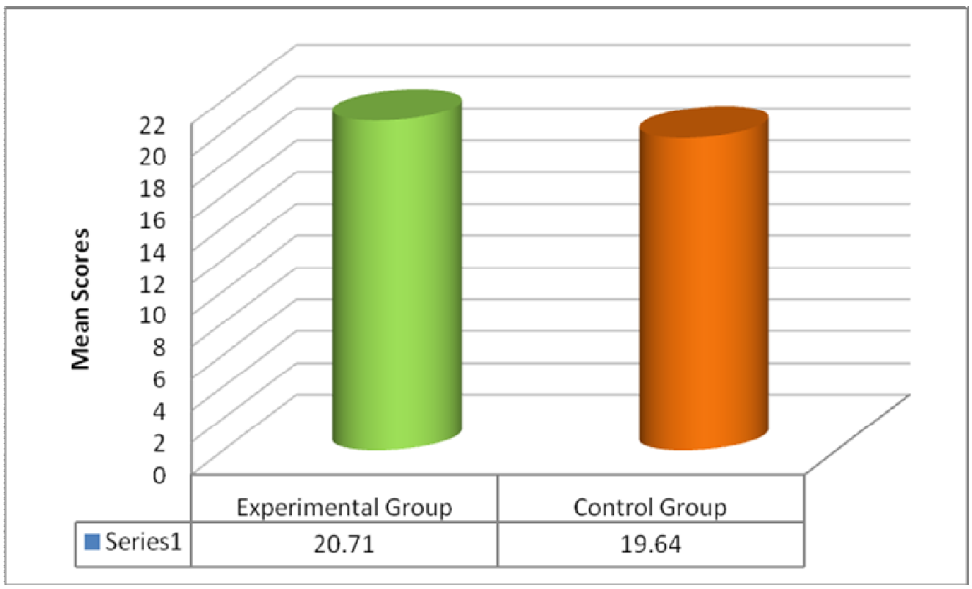


Figure 62. Comparison of the mean posttest scores of Refocus on planning in Experimental and control group

The graphical representation of mean posttest scores of Refocus on planning in experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in mean score experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Positive Reappraisal) in the experimental and control group.

To compare the posttest scores of Positive Reappraisal in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Positive Reappraisal between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 81.

Table 81

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Positive Reappraisal) in Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Positive re appraisal posttest values	Experimental group	45	16.98	2.54	2.02*	0.05
	Control group	45	15.98	2.13		

*P<0.05

It is clear from table 81 that the calculated t value obtained by the mean posttest scores of Positive reappraisal in the experimental and control group for the total sample is (t=2.02, P<0.05) it is significant at 0.05 level. So there is a significant difference between mean posttest scores of Positive reappraisal of secondary school students in the experimental and control group. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive reappraisal of secondary school students.

The mean posttest scores of Positive reappraisal in the experimental and control group of secondary school students are represented graphically in figure 63.

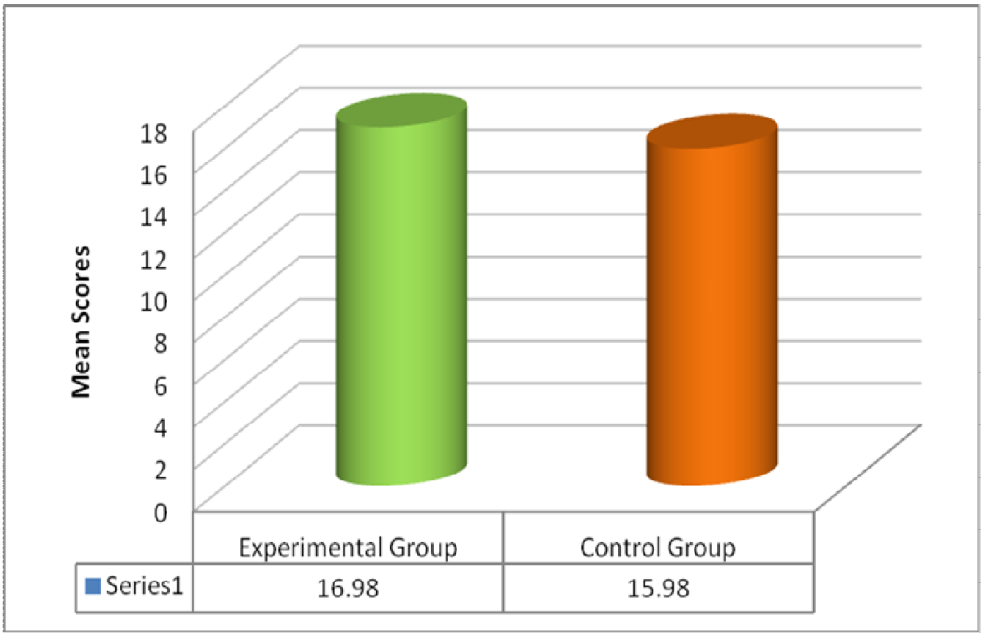


Figure 63. Comparison of the mean posttest scores of Positive re appraisal in Experimental and control group

The graphical representation of mean posttest scores of Positive reappraisal in experimental and control group shows that the mean performance of secondary school students in two groups are not similar and in the mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Putting into Perspective) in the experimental and control group

To compare the posttest scores of putting into Perspective in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Putting into Perspective between experimental and control groups were subjected to the

test of significance of the difference between means. The details of t-test for the total sample are presented in Table 82.

Table 82

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Putting into Perspective) in Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Putting into perspective posttest values	Experimental group	45	18.18	3.24	1.55	N.S
	Control group	45	18.20	2.99		

N.S =Not Significant

It is clear from the table 82 that the calculated t value obtained by the mean posttest scores of Putting into perspective in the experimental and control group for the total sample is 1.55 it is not significant at 0.05 level. So there is no significant difference between mean posttest scores of Putting into the perspective of secondary school students in the experimental and control group. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach has not significantly effective in enhancing the level of Putting into the perspective of secondary school students than the existing method of teaching.

The mean posttest scores of Putting into perspective in the experimental and control group of secondary school students are represented graphically in figure 64.

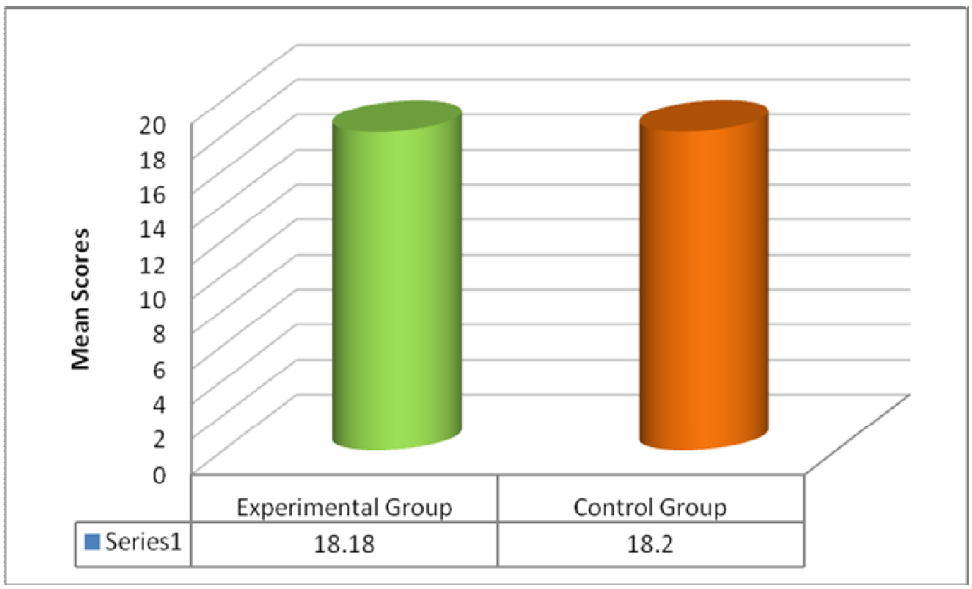


Figure 64. Comparison of the mean posttest scores of putting into perspective in Experimental and control group

The graphical representation of mean posttest scores of Putting into perspective in experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in the mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Emotional Regulation component (Catastrophizing) in the experimental and control group

To compare the posttest scores of Catastrophizing in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Catastrophizing between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in table 83.

Table 83

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation Component (Catastrophizing) in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Catastrophizing posttest values	Experimental group	45	18.07	3.33	2.05*	0.05
	Control group	45	16.53	3.75		

*P<0.05

It is clear from table 83 that the calculated t value obtained by the mean posttest scores of Catastrophizing in the experimental and control group for the total sample is (t=2.05, P<0.05). It is significant at 0.05 level. So there is a significant difference between mean posttest scores of Catastrophizing of secondary school students in the experimental and control group. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Catastrophizing of secondary school students.

The mean posttest scores of Catastrophizing in the experimental and control group of secondary school students are represented graphically in figure 65.

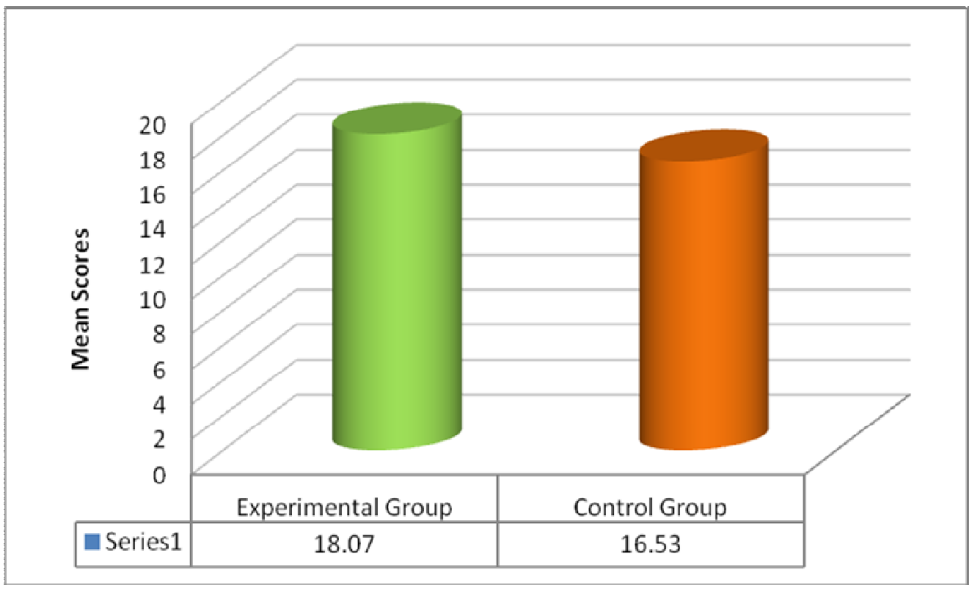


Figure 65. Comparison of the mean posttest scores of Catastrophizing in Experimental and control group

The graphical representation of mean posttest scores of Catastrophizing in the experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in the mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of Mean Posttest Scores of Emotional Regulation Component (Others Blame) in Experimental and Control Group.

To compare the posttest scores of Blaming Others in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Others Blame between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 84.

Table 84

Result of Test of Significance of Difference between Mean Posttest Scores of Emotional Regulation component (Others Blame) in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Others Blame posttest values	Experimental group	45	15.73	3.50	2*	0.05
	Control group	45	14.22	3.64		

*P<0.05

It is clear from table 84 that the calculated t value obtained by the mean posttest scores of blaming others in the experimental and control group for the total sample is t=2, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean posttest scores of blaming others of secondary school students in the experimental and control group. The mean scores of the experimental group are greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of blaming others of secondary school students.

The mean posttest scores of blaming others in the experimental and control group of secondary school students are represented graphically in figure 66.

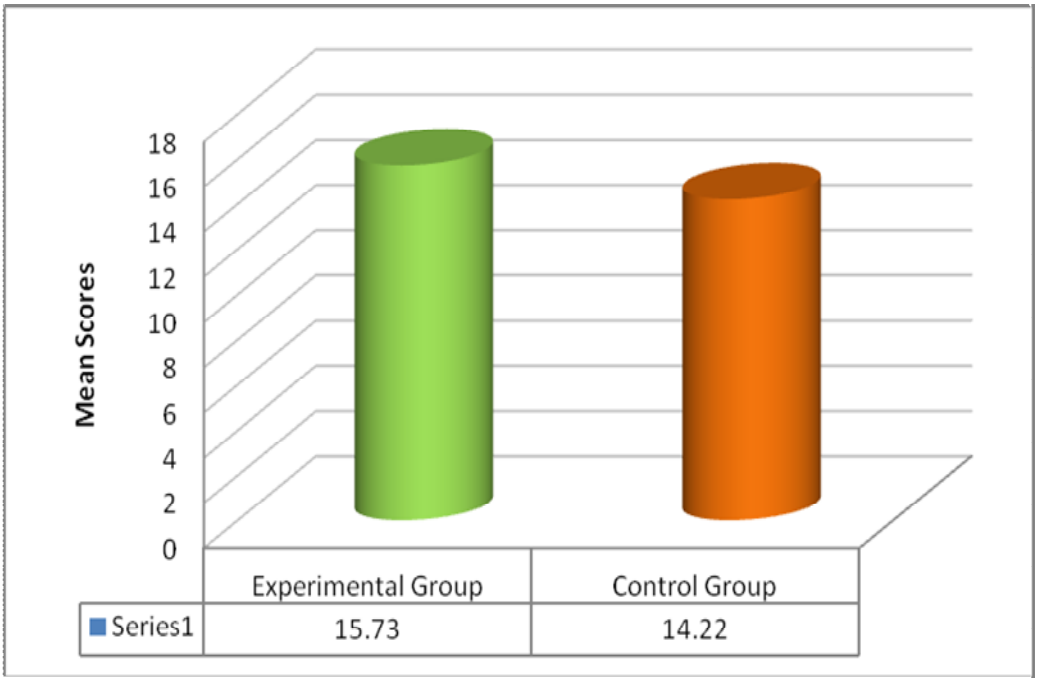


Figure 66. Comparison of the mean posttest scores of Others Blame in Experimental and control group

The graphical representation of mean posttest scores of Blaming others in the experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in a mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

The mean difference analysis of post test scores for the experimental group and control group of Emotional Regulation and its components of secondary school students showed the following results.

The post test scores of experimental and control group is differ significantly in Emotional Regulation of secondary school students for the total sample and for all components except putting into perspective

Comparison of the Mean Gain Scores of Emotional Regulation between Experimental and Control group

To analyze differences in the effect of both Anchored Instruction and Existing Method of Teaching on Emotional Regulation of control group and experimental group investigator compared mean gain score. Below shows the details

Comparison of mean gain scores of Emotional Regulation between the experimental and control group.

To compare the gain scores of the Emotional Regulation of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of Emotional Regulation between experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in Table 85.

Table 85

Result of Test of Significance of Difference between Mean Gain Scores of Emotional Regulation in Experimental and Control Group

Groups Compared	Sample size	Mean	S.D.	t-value	Level of Significance	Effect size	Cohen's Category
Experimental Group	45	18.31	7.73	2.15*	0.05	0.45	Small
Control Group	45	14.80	7.70				

*P<0.05

It is clear from table 85 that the calculated t value obtained by the mean gain scores of Emotional Regulation in the experimental and control group for the

total sample is (t=2.15, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean gain scores of the Emotional Regulation of secondary school students in experimental and control groups. The mean gain score of the experimental group is greater than the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Emotional Regulation of secondary school students.

Since the mean difference was found to be significant, the effect size was calculated. The value of Cohen's d is .45 which is less than the limit set for the medium effect in Cohen's category. It means that the Anchored Instructional Approach has a small effect in enhancing the emotional regulation of secondary school students of Kerala when compared to the Existing Method of Teaching.

The mean gain scores of Emotional Regulation in an experimental and control group of secondary school students are represented graphically in figure 67.

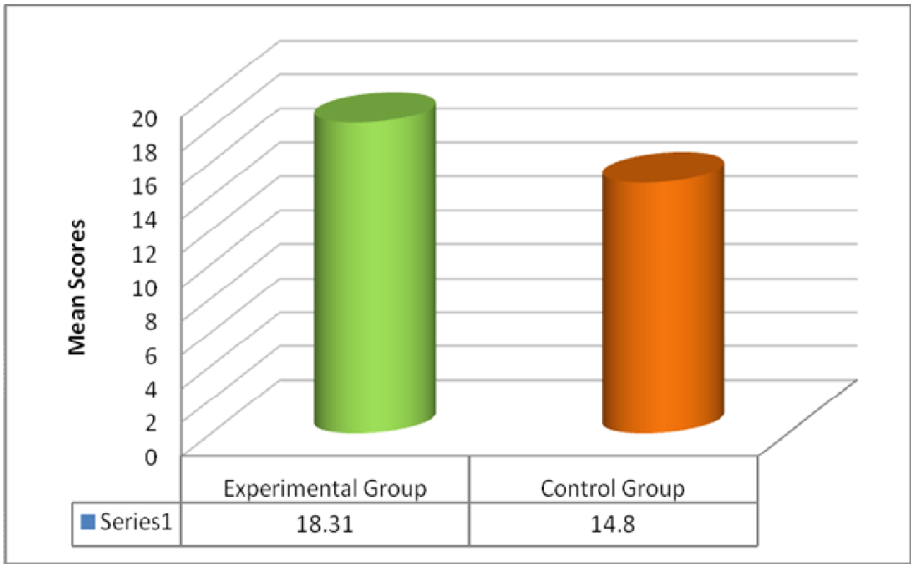


Figure 67. Comparison of the mean gain scores of Emotional Regulation in Experimental and control groups

The graphical representation of mean gain scores of Emotional Regulation in the experimental group shows that the mean performance of secondary school students in two groups is not similar and the mean gain scores of the experimental group are greater than the control group. This supports the result of mean difference analysis

A Component Variable Wise Gain Score of Emotional Regulation between Experimental and Control Group

Below given table shows nine component-wise pretests to posttest comparison of Emotional Regulation within the experimental group and experimental group. It will help to identify the effect of the Anchored Instruction and Existing Method of Teaching in each component of Emotional Regulation.

Comparison of mean gain scores of Emotional Regulation component (Self Blame) in the experimental and control group.

To compare the gain scores of Self Blame in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of Self Blame between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 86.

Table 86

Result of Test of Significance of Difference between Mean Gain Scores of Emotional Regulation (Self Blame) in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Self Blame Gain score	Experimental group	45	1.93	1.44	3.56**	0.01
	Control group	45	0.71	1.80		

**P<0.01

It is clear from table 86 that the calculated t value obtained by the mean gain scores of Self Blame in the experimental and control group for the total sample is (t=3.56, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean gain scores of Self Blame of secondary school students in experimental and control groups. The mean gain score of the experimental group is greater than the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Self Blame of secondary school students.

The mean gain scores of Self Blame in the experimental and control groups of secondary school students are represented graphically in figure 68.

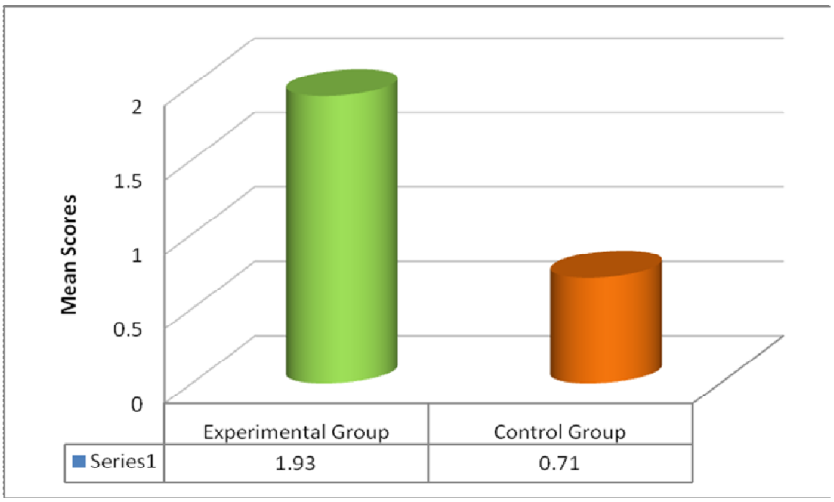


Figure 68. Comparison of the mean gain scores of Self Blame in Experimental and Control groups

The graphical representation of mean gain scores of Self Blame in the experimental group shows that the mean performance of secondary school students in two groups is not similar and the mean gain scores of the experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Acceptance) in the experimental and control group.

To compare the gain scores of Acceptance in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Acceptance between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 87.

Table 87

Result of Test of Significance of Difference between Mean Gain Scores of Emotional Regulation (Acceptance) in Experimental and Control Groups

Variable	Group	N	Mean	SD	t-value	Level of Significance
Acceptance gain score	Experimental group	45	1.55	.75	4.294**	0.01
	Control group	45	-0.13	2.53		

**P<0.01

It is clear from table 87 that the calculated t value obtained by the mean gain scores of Acceptance in the experimental and control group for the total sample is (t=4.294, P<0.01). It is significant at the 0.01 level. So there is a

significant difference between mean gain scores of Acceptance of secondary school students in the experimental and control group. The mean gain score of the experimental group is greater than the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Acceptance of secondary school students.

The mean gain scores of Acceptance in the experimental and control groups of secondary school students are represented graphically in figure 69.

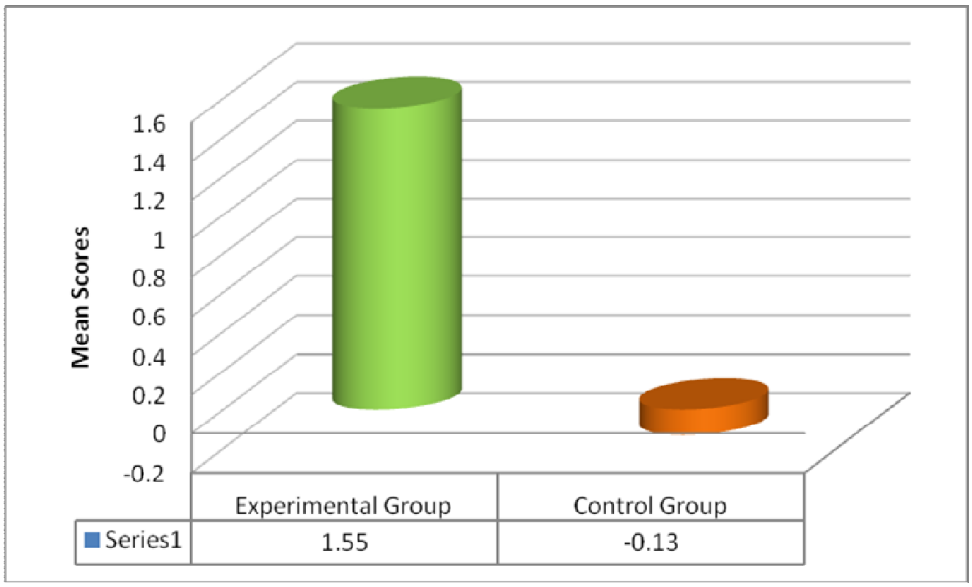


Figure 69. Comparison of the mean gain scores of Acceptance in Experimental and Control groups

The graphical representation of mean gain scores of Acceptance in the experimental group shows that the mean performance of secondary school students in two groups are not similar and mean gain scores of experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Rumination) in the experimental and control group.

To compare the gain scores of Rumination in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Rumination between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 88.

Table 88

Result of Test of Significance of Difference between Mean Gain Scores of Rumination in Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Rumination gain score	Experimental group	45	1.98	.62	4.89**	0.01
	Control group	45	0.13	2.46		

**P<0.01

It is clear from table 88 that the calculated t value obtained by the mean gain scores of Rumination in the experimental and control group for the total sample is (t=4.89, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean gain scores of the Rumination of secondary school students in experimental and control groups. The mean gain score of the experimental group is greater than the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Rumination of secondary school students.

The mean gain scores of Rumination in the experimental and control groups of secondary school students are represented graphically in figure 70.

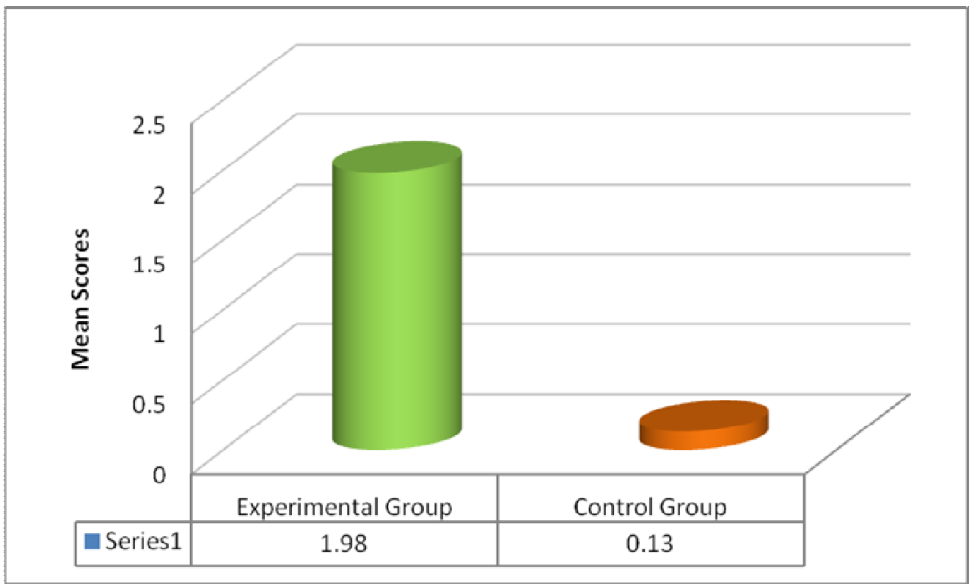


Figure 70. Comparison of the mean gain scores of Rumination in Experimental and Control groups

The graphical representation of mean gain scores of Rumination in the experimental group shows that the mean performance of secondary school students in two groups are not similar and mean gain scores of experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Positive Refocusing) in the experimental and control group.

To compare the gain scores of Positive Refocusing in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Positive Refocusing between experimental and control groups were subjected to the test of

significance of the difference between means. The details of the t-test for the total sample are presented in the table 89.

Table 89

Result of Test of Significance of Difference between Mean Gain Scores of Positive Refocusing in Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Positive refocusing gain score	Experimental group	45	1.44	2.79	1.34	N.S
	Control group	45	0.87	0.79		

N.S =Not Significant

It is clear from table 89 that the calculated t value obtained by the mean gain scores of Positive Refocusing in the experimental and control group for the total sample is (t=1.34). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Positive Refocusing of secondary school students in the experimental and control group. The mean gain score of the experimental group is greater than the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive Refocusing of secondary school students.

The mean gain scores of Positive Refocusing in the experimental and control groups of secondary school students are represented graphically in figure 71.

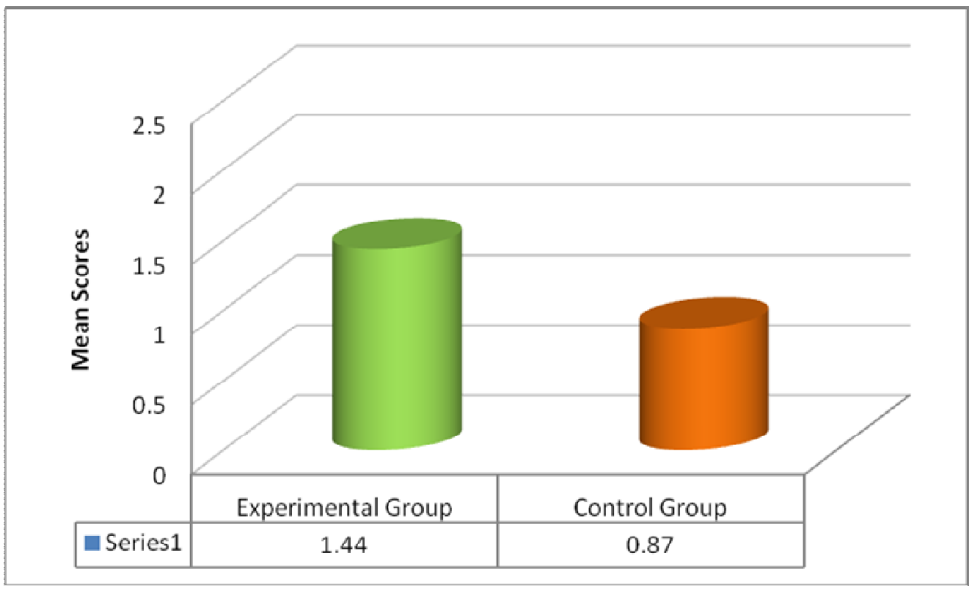


Figure 71. Comparison of the mean gain scores of Positive Refocusing in Experimental and control groups

The graphical representation of mean gain scores of Positive Refocusing in the experimental group shows that the mean performance of secondary school students in two groups are not similar and mean gain scores of experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Refocus on Planning) in the experimental and control group.

To compare the gain scores of Refocus on Planning in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Refocus on Planning between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 90.

Table 90

Result of Test of Significance of Difference between Mean Gain Scores of Refocus on Planning in Experimental and Control Groups

Variable	Group	N	Mean	SD	t-value	Level of Significance
Refocus on planning gain score	Experimental group	45	2.69	1.22	.51	N.S
	Control group	45	2.58	0.78		

N.S =Not Significant

It is clear from table 90 that the calculated t value obtained by the mean gain scores of Refocus on Planning in the experimental and control group for the total sample is (t=.51). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Refocus on Planning of secondary school students in experimental and control groups. The mean gain score of the experimental group is almost the same as the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Refocus on Planning of secondary school students.

The mean gain scores of Refocus on Planning in the experimental and control groups of secondary school students are represented graphically in figure 72.

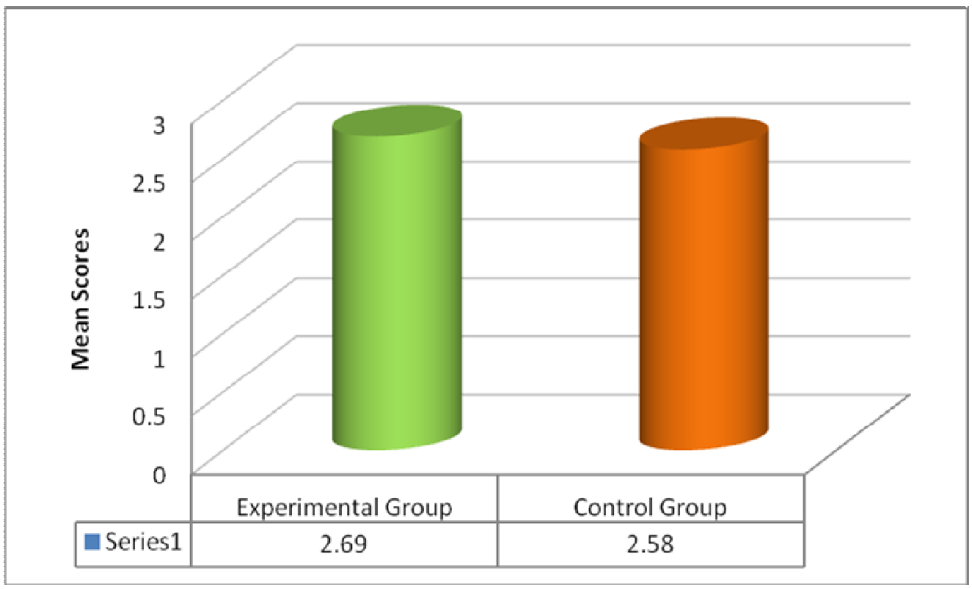


Figure 72. Comparison of the mean gain scores of Refocus on Planning in Experimental and control groups

The graphical representation of mean gain scores of Refocus on Planning in the experimental group shows that the mean performance of secondary school students in two groups are not similar and mean gain scores of experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Positive Reappraisal) in the experimental and control group.

To compare the gain scores of Positive Reappraisal in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Positive Reappraisal between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 91.

Table 91

Result of Test of Significance of Difference between Mean Gain Scores of Positive Reappraisal in Experimental and Control Groups

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Positive re appraisal gain score	Experimental group	45	2.98	1.57	1.64	N.S
	Control group	45	2.42	1.64		

N.S =Not Significant

It is clear from table 91 that the calculated t value obtained by the mean gain scores of Positive Reappraisal in the experimental and control group for the total sample is (t=1.64). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Positive Reappraisal of secondary school students in the experimental and control group. The mean gain score of the experimental group is almost the same as the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Positive Reappraisal of secondary school students.

The mean gain scores of Positive Reappraisal in the experimental and control groups of secondary school students are represented graphically in figure 73.

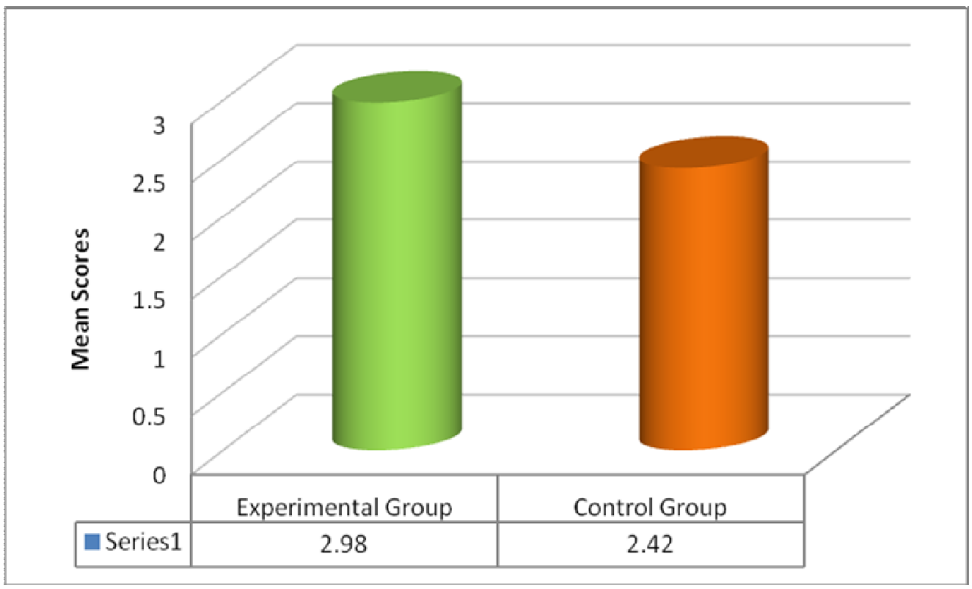


Figure 73. Comparison of the mean gain scores of Positive Reappraisal in Experimental and control groups

The graphical representation of mean gain scores of Positive Reappraisal in the experimental group shows that the mean performance of secondary school students in two groups is not similar and the mean gain scores of the experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Putting into Perspective) in the experimental and control group.

To compare the gain scores of Putting into Perspective in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Putting into Perspective between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 92.

Table 92

Result of Test of Significance of Difference between Mean Gain Scores of Putting into Perspective in Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Putting into perspective gain score	Experimental group	45	1.69	1.18	1.47	N.S
	Control group	45	1.24	1.42		

N.S =Not Significant

It is clear from table 92 that the calculated t value obtained by the mean gain scores of Putting into Perspective in the experimental and control group for the total sample is (t=1.47). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Putting into Perspective of secondary school students in the experimental and control group. The mean gain score of the experimental group is almost the same as the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Putting into Perspective of secondary school students.

The mean gain scores of Putting into Perspective in the experimental and control groups of secondary school students are represented graphically in figure 74.

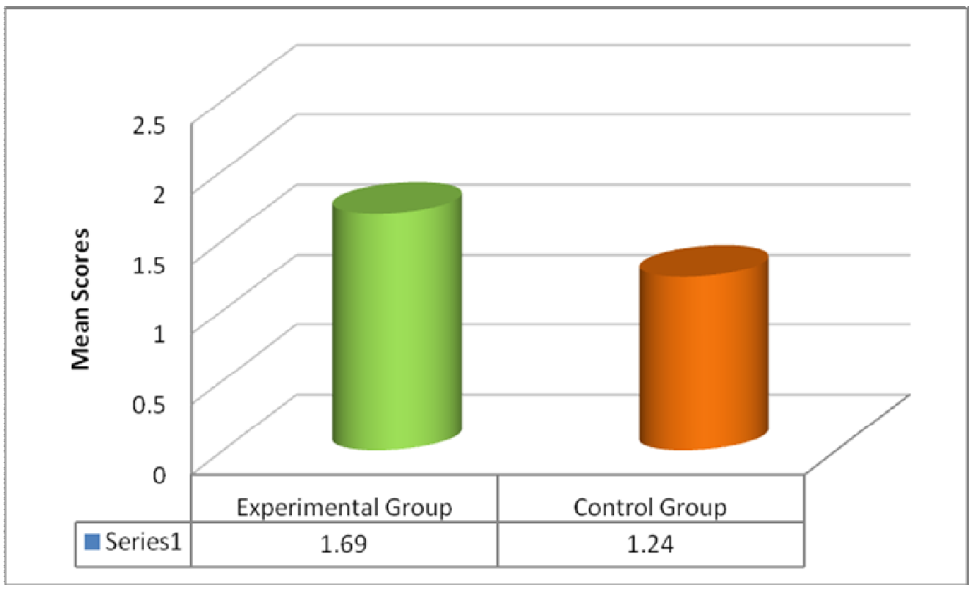


Figure 74. Comparison of the mean gain scores of Putting into Perspective in experimental and control groups

The graphical representation of mean gain scores of Putting into Perspective in the experimental group shows that the mean performance of secondary school students in two groups are not similar and mean gain scores of experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of mean gain scores of Emotional Regulation component (Catastrophizing) in the experimental and control group

To compare the gain scores of Catastrophizing in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Catastrophizing between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 93.

Table 93

Result of test of significance of difference between mean gain scores of Catastrophizing in experimental and control groups

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Catastrophizing gain score	Experimental group	45	2.73	1.45	1.39	N.S
	Control group	45	3.29	2.25		

N.S =Not Significant

It is clear from table 93 that the calculated t value obtained by the mean gain scores of Catastrophizing in the experimental and control group for the total sample is (t=1.39). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Catastrophizing of secondary school students in experimental and control groups. The mean gain score of the experimental group is greater than the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Catastrophizing of secondary school students.

The mean gain scores of Catastrophizing in the experimental and control group of secondary school students are represented graphically in figure 75.

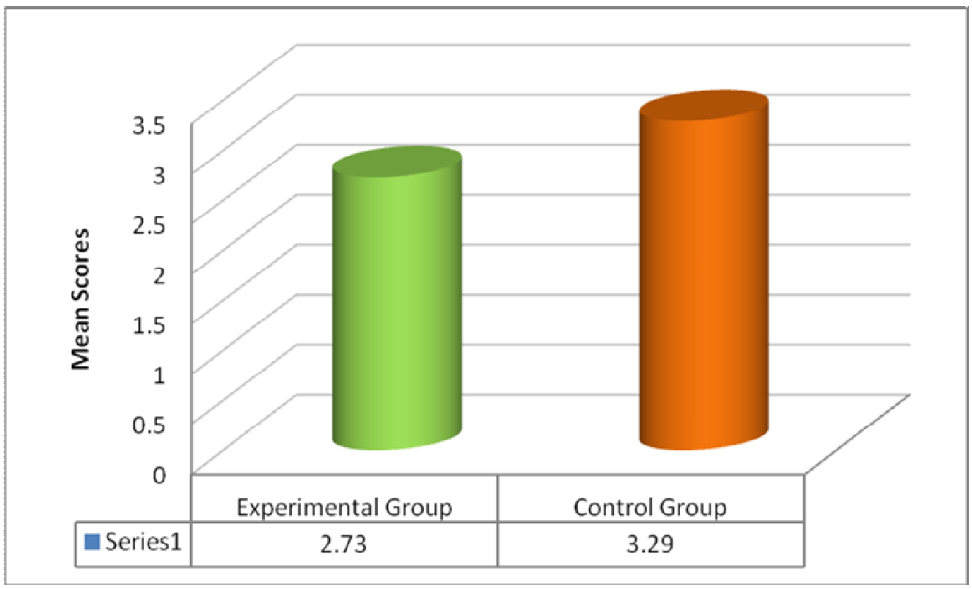


Figure 75. Comparison of the mean gain scores of Catastrophizing in Experimental and control groups

The graphical representation of mean gain scores of Catastrophizing in experimental group shows that the mean performance of secondary school students in two groups are not similar and mean gain scores of experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Emotional Regulation component (Others Blame) in the experimental and control group.

To compare the gain scores of Blaming Others in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Others Blame between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 94.

Table 94

Result of Test of Significance of Difference between Mean Gain Scores of Others Blame in Experimental and Control Groups

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Others Blame gain score	Experimental group	45	1.22	2.29	.38	N.S
	Control group	45	1.40	2.18		

N.S =Not Significant

It is clear from table 94 that the calculated t value obtained by the mean gain scores of Blaming Others in the experimental and control group for the total sample is (t=.38). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Others Blame of secondary school students in experimental and control groups. The mean gain score of the experimental group is almost the same as the mean control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Others Blame of secondary school students.

The mean Gain scores of Blaming Others in an experimental and control groups of secondary school students are represented graphically in figure 76.

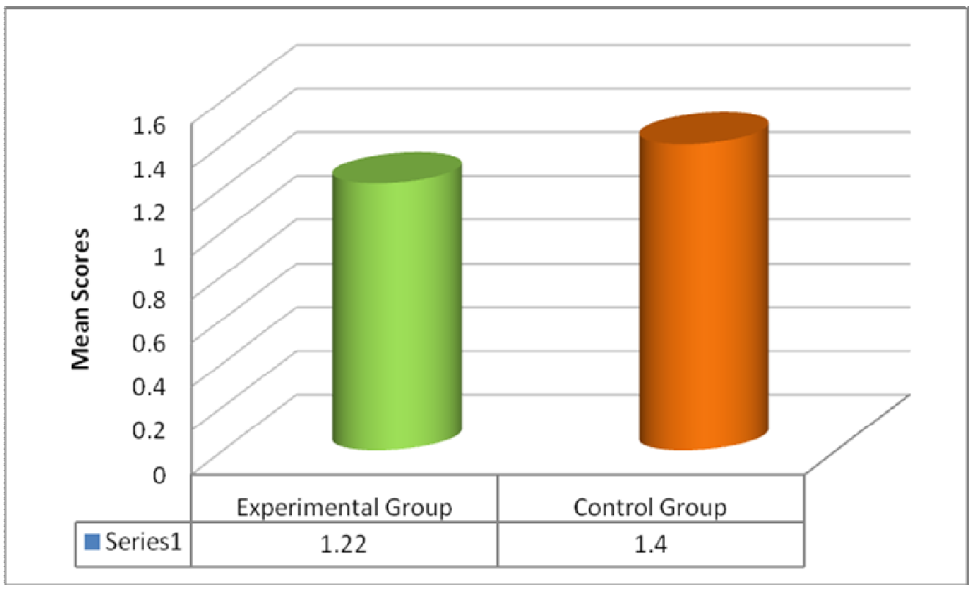


Figure 76. Comparison of the mean gain scores of Blaming Others in Experimental and control groups

The graphical representation of mean gain scores of Others Blame in the experimental and control groups show that the mean performance of secondary school students in two groups are not similar and the mean gain scores of the experimental group is greater than the control group. This supports the result of mean difference analysis.

The mean difference analysis of gain scores for the experimental group and control group of Emotional Regulation and its components of secondary school students showed the following results.

The gain scores of experimental and control groups are differ significantly in Emotional Regulation of secondary school students for the total sample and components such as Self Blame, Acceptance and Rumination. Mean gain scores of all other components are similar.

Comparison of Mean Pretest Scores of Process Skills in Social Science of Experimental and Control Groups

Comparison of the mean pretest scores of process skills in social science of experimental and control group to analyze whether the Process Skills in Social Science of experimental group and control groups differ before teaching in Anchored Instruction and teaching with existing methods. The table given below shows the details.

Comparison of mean pretest scores of Process skills in social science of experimental and control group in total sample.

To compare the pre-experimental status of Process Skills in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores of Process Skills in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 95.

Table 95

Result of Test of Significance of Difference between Mean Pretest Scores of Process Skills in Social Science between Experimental and Control Groups in Total Sample

Groups Compared	Sample size	Mean	S.D.	t-value	Level of Significance
Experimental Group	45	12.73	2.54	.58	N.S
Control Group	45	12.44	2.16		

N.S =Not Significant

It is clear from table 95 that the calculated t value obtained by the mean pre test scores of Process skills in social science between experimental and control groups for the total sample is (t=.58). It is not significant at the 0.05 level. So there is no significant difference between mean pre test scores of Process skills in the social science of secondary school students in the experimental and control groups.

The mean pretest scores of Process skills in social science in experimental and control groups of secondary school students are represented graphically in figure 77.

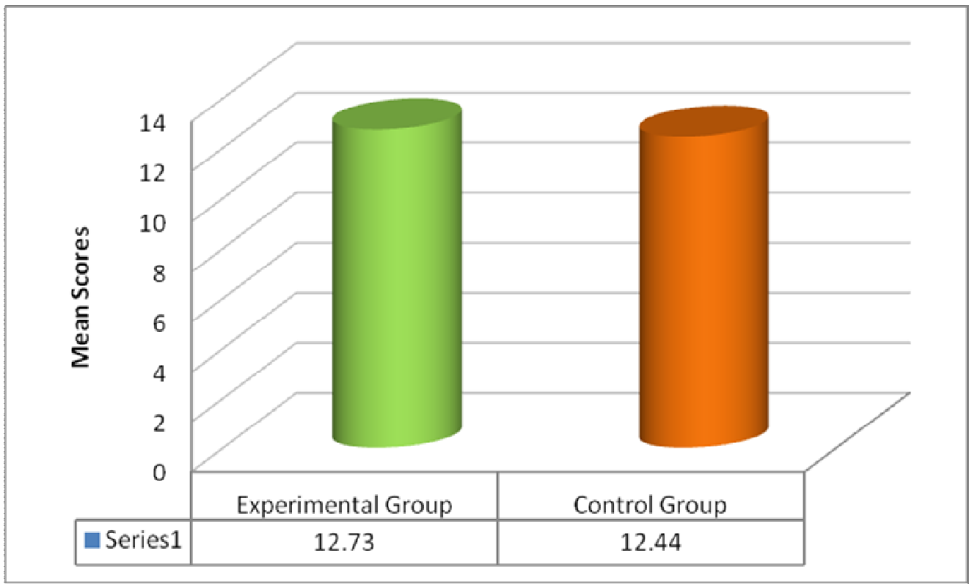


Figure 77. Comparison of the mean pretest scores of Process skills in social science in Experimental and Control groups

The graphical representation of mean pre test scores of Process skills in social science in the experimental and control groups show that the mean performance of secondary school students in two groups are similar. This supports the result of mean difference analysis

Comparison of the Mean Pretest Scores of Process Skills in Social Science (Component-Wise) between Experimental and Control Groups

To analyze whether the component-wise Process Skills in Social Science control experimental and control group differ before the treatment. Below given table shows Eight component-wise pretest scores comparison within the experimental and control groups. The table given below shows the details.

Comparison of mean pretest scores of Process skills in social science component (classify) between the experimental and control groups

To compare the pre-experimental status of Classify in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores of Process Classify in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 96.

Table 96

Result of Test of Significance of Difference between Mean Pretest Scores of Classify between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Classify	Experimental group	45	1.98	1.30	.00	N.S
	Control group	45	1.98	1.18		

N.S =Not Significant

From table 96 it can be seen that the obtained t-value for the mean pre-test score comparison of the experimental and control group is (t= .00). It is found to be not significant at .05 levels. This shows that there is no significant difference between the mean pre-test scores of experimental and control groups in the (Classify) component of Process Skills in Social Science.

The mean pretest scores of Classify in the experimental and control groups of secondary school students are represented graphically in figure 78.

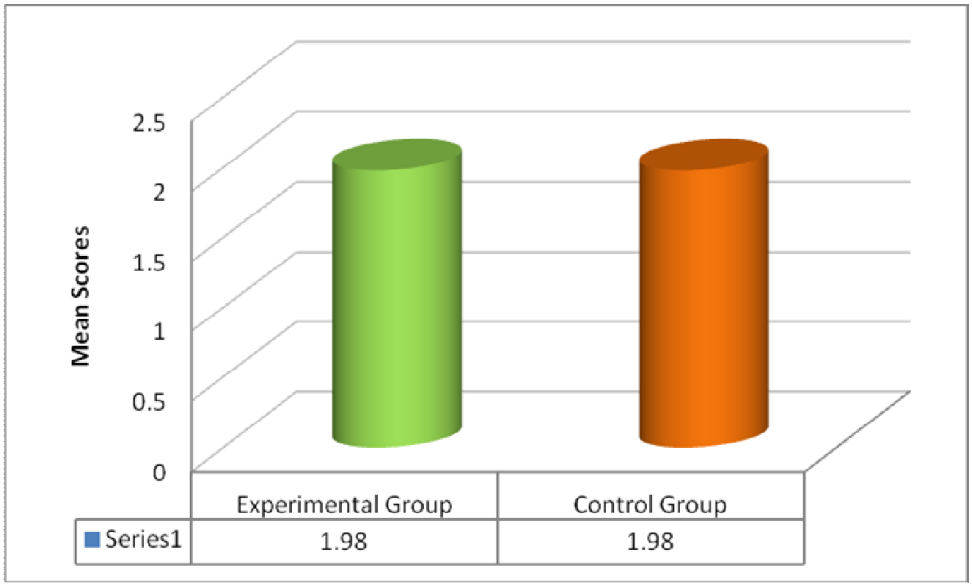


Figure 78. Comparison of the mean pretest scores of classify in experimental and control groups

The graphical representation of mean pretest scores of Classify in the experimental and Control groups shows that the mean performance of secondary school students in two groups is similar. This supports the result of mean difference analysis.

Comparison of mean pretest scores of Process skills in social science component (Observe) between the experimental and control group.

To compare the pre-experimental status of (Observe) component of Process Skills in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores for component (Observe) of Process Skill in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 97.

Table 97

Result of Test of Significance of Difference between Mean Pretest Scores of Observe between Experimental and Control Group

Variable	Group	N	Mean	SD	t-value	Level of Significance
Observe pretest	Experimental group	45	2.18	.65	-.30	N.S
	Control group	45	2.13	.73		

N.S =Not Significant

It is clear from table 97 that the calculated t value obtained by the mean pretest scores of Observe between experimental and control groups for the total sample is (t=-.30). It is not significant at the 0.05 level. So there is no significant difference between mean pretest scores of Observe of secondary school students in experimental and control groups. The mean pretest score of the experimental group almost the same as the mean control group.

The mean pretest scores of Observe in the experimental and control groups of secondary school students are represented graphically in figure 79.

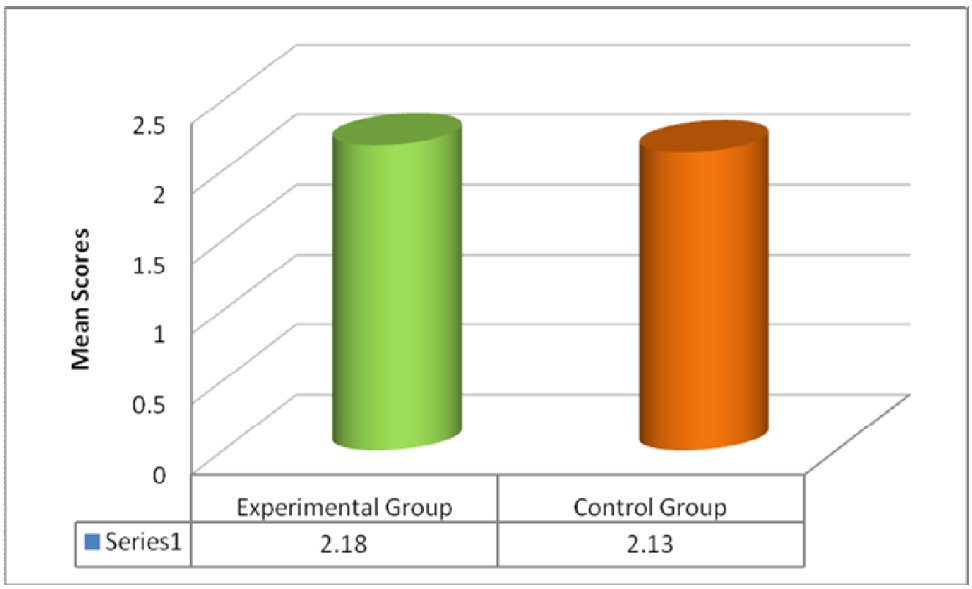


Figure 79. Comparison of the mean pretest scores of Observe in Experimental and Control groups

The graphical representation of mean pretest scores of observe in the experimental and control groups shows that the mean performance of secondary school students in two groups are equal to the control group. This supports the result of mean difference analysis.

Comparison of mean pretest scores of Process skills in social science component (locate) between the experimental and control group.

To compare the pre-experimental status of locating in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores of Process locate in Social Science between experimental and control groups were subjected to a test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 98.

Table 98

Result of Test of Significance of Difference between Mean Pretest Scores of Locate between Experimental and Control Groups

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Locate pretest	Experimental group	45	2.04	0.98	.00	N.S
	Control group	45	2.04	0.98		

N.S =Not Significant

It is clear from table 98 that the calculated t value obtained by the mean pretest scores of Locate between experimental and control group for the total sample is (t=.00). It is not significant at the 0.05 level. So there is no significant difference between mean pretest scores of secondary school students in experimental and control groups. The mean pretest score of the experimental group is equal to the mean control group.

The mean pretest scores of Locate in experimental and control groups of secondary school students are represented graphically in figure 80.

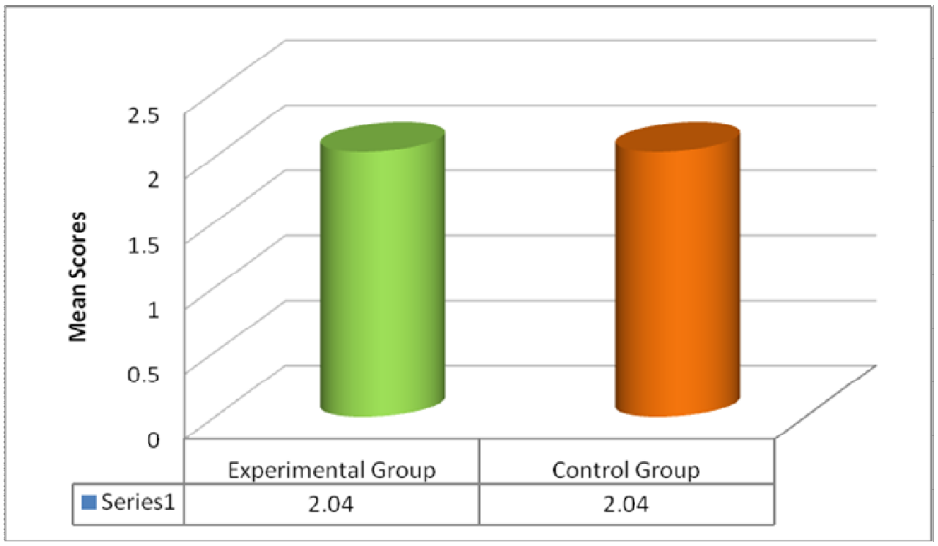


Figure 80. Comparison of the mean pretest scores of Locate in Experimental and control groups

The graphical representation of mean pretest scores of Locate in the experimental and control groups shows that the mean performance of secondary school students in two groups are equal. This supports the result of mean difference analysis

Comparison of mean pretest scores of Process skills in social science component (predict) between the experimental and control group.

To compare the pre-experimental status of Predict in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores of Process Predict in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 99.

Table 99

Result of Test of Significance of Difference between Mean Pretest Scores of Predict between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Predicting pretest	Experimental group	45	1.58	0.84	.12	N.S
	Control group	45	1.56	0.87		

N.S =Not Significant

It is clear from the table 99 that the calculated t value obtained by the mean pretest scores of Predict between experimental and control groups for the total sample is(t=.12. It is not significant at 0.05 level. So there is no significant difference between mean pretest scores of Predict of secondary school

students in experimental and control group. The mean pretest scores of the experimental group is almost the same as the mean control group.

The mean pretest scores of Predict in the experimental and control groups of secondary school students are represented graphically in figure 81

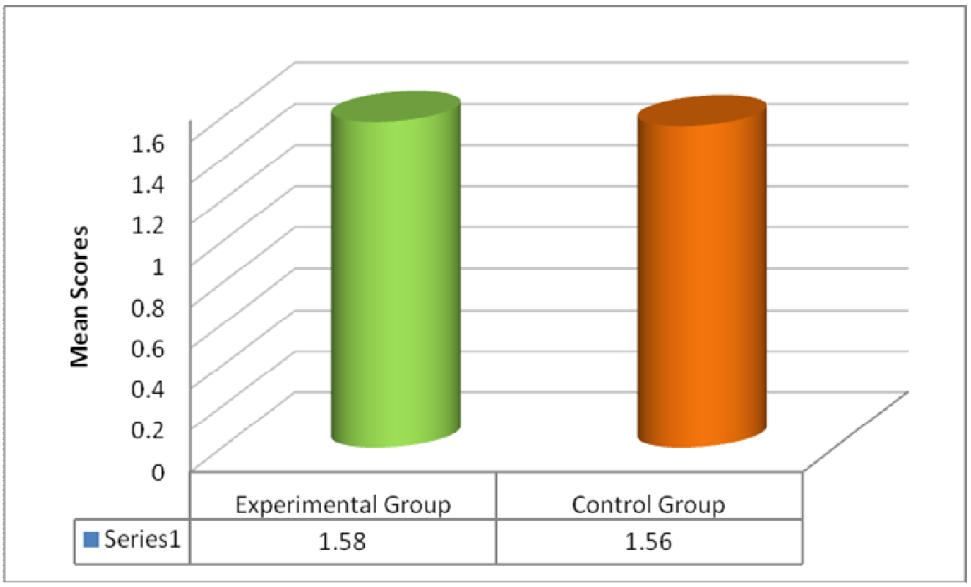


Figure 81. Compare the mean pretest scores of Predict in Experimental and control groups

The graphical representation of mean pretest scores of Predict in the experimental and control groups show that the mean performance of secondary school students in two groups are similar. This supports the result of mean difference analysis.

Comparison of mean pretest scores of Process skills in social science component (synthesize) between the experimental and control groups.

To compare the pre-experimental status of synthesizing in Social Science of secondary school students between experimental and control

groups. The mean and standard deviations of pretest scores of Process synthesize in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 100.

Table 100

Result of Test of Significance of Difference between Mean Pretest Scores of Synthesize between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Synthesize pretest	Experimental group	45	1.02	.69	1.09	N.S
	Control group	45	.87	.66		

N.S =Not Significant

It is clear from table 100 that the calculated t value obtained by the mean pretest scores of Synthesize between experimental and control groups for the total sample is (t=1.09). It is not significant at the 0.05 level. So there is no significant difference between mean pretest scores of Synthesize of secondary school students in experimental and control groups. Mean pretest score of an experimental group greater than the mean control group.

The mean pretest scores of Synthesize in the experimental and control groups of secondary school students are represented graphically in figure 82.

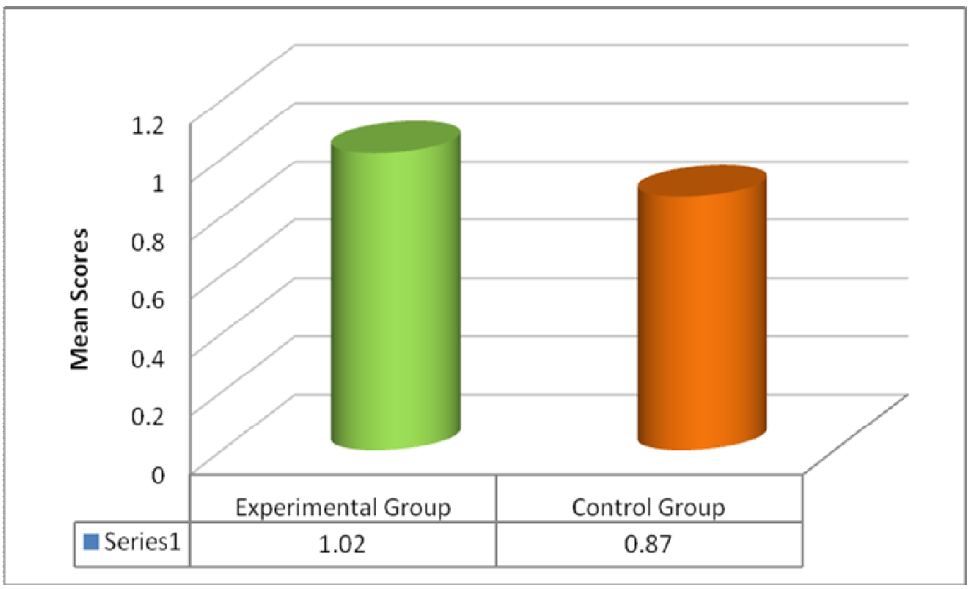


Figure 82. Comparison of the mean pretest scores of Synthesize in Experimental and control groups

The graphical representation of mean pretest scores of Synthesize in the experimental and control groups shows that the mean performance of secondary school students in two groups are similar. This supports the result of mean difference analysis

Comparison of mean pretest scores of Process skills in social science component (Evaluate) between the experimental and control group.

To compare the pre-experimental status of Evaluate in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores of Process Evaluate in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 101.

Table 101

Result of Test of Significance of Difference between Mean Pretest Scores of Evaluate between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Evaluate pretest	Experimental group	45	1.47	0.89	.17	N.S
	Control group	45	1.44	0.92		

N.S =Not Significant

It is clear from table 101 that the calculated t value obtained by the mean pretest scores of Evaluate between experimental and control group for the total sample is (t=.17). It is not significant at the 0.05 level. So there is no significant difference between mean pretest scores of evaluation of secondary school students in experimental and control groups. The mean pretest scores of the experimental group almost the same as the mean control group.

The mean pretest scores of Evaluate in the experimental and control groups of secondary school students are represented graphically in figure 83.

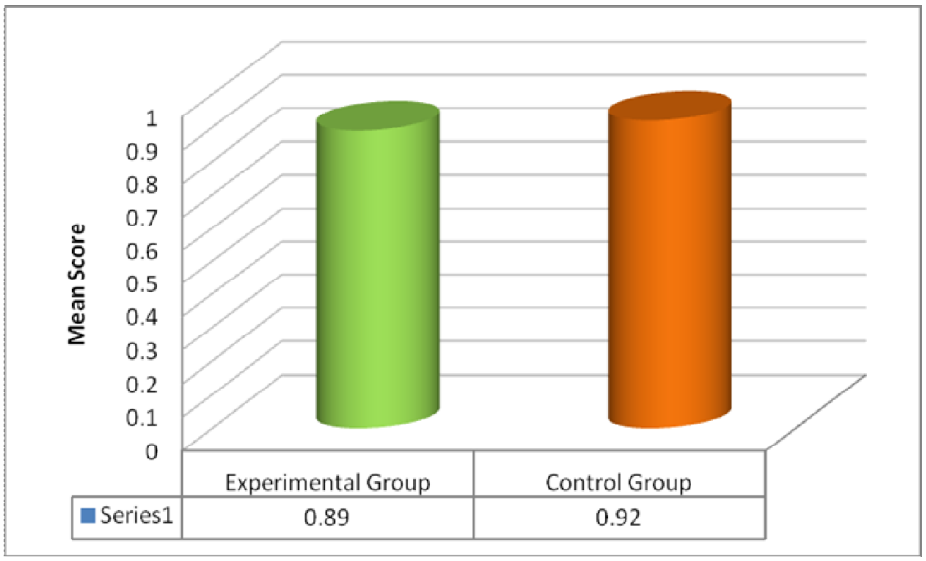


Figure 83. Comparison of the mean pretest scores of Evaluate in Experimental and Control group

The graphical representation of mean pretest scores of Evaluate in the experimental and control groups shows that the mean performance of secondary school students in two groups is similar. This supports the result of mean difference analysis.

Comparison of mean pretest scores of process skills in social science component (interpret) between the experimental and control group.

To compare the pre-experimental status of Interpret in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of pretest scores of Process Interpret in Social Science between experimental and control groups were subjected to a test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 102.

Table 102

Result of Test of Significance of Difference between Mean Pretest Scores of Interpret between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Interpret pretest	Experimental group	45	1.04	0.71	.15	N.S
	Control group	45	1.02	0.69		

N.S =Not Significant

It is clear from table 102 that the calculated t value obtained by the mean pretest scores of Interpret between experimental and control group for the total sample is (t=.15). It is not significant at the 0.05 level. So there is no significant difference between mean pretest scores of the Interpret of secondary school

students in experimental and control groups. The mean pretest scores of the experimental group is almost the same as the mean control group.

The mean pretest scores of Interpret in the experimental and control groups of secondary school students are represented graphically in figure 84.

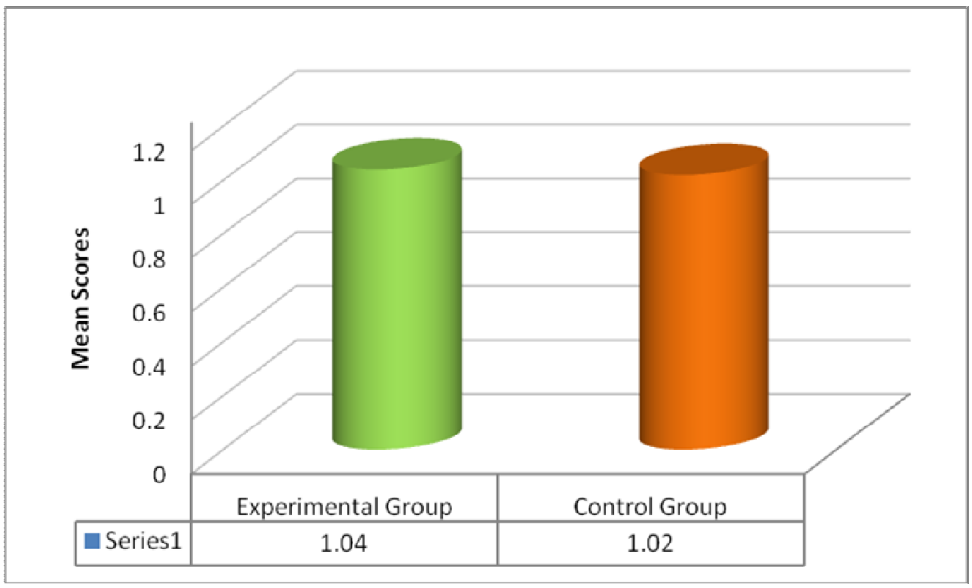


Figure 84. Comparison of the mean pretest scores of Interpret in Experimental and control groups

The graphical representation of mean pretest scores of Interpret in the experimental and control groups shows that the mean performance of secondary school students in two groups are similar. This supports the result of mean difference analysis.

Comparison of mean pretest scores of process skills in social science component (measure) between the experimental and control group.

To compare the pre-experimental status of measure in Social Science of secondary school students between experimental and control groups. The

mean and standard deviations of pretest scores of Process measure in Social Science between experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 103.

Table 103

Result of Test of Significance of Difference between Mean Pretest Scores of Measure between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Measure Pretest	Experimental group	45	1.42	0.72	.14	N.S
	Control group	45	1.40	0.75		

N.S =Not Significant

It is clear from table 103 that the calculated t value obtained by the mean pretest scores of Measure between experimental and control group for the total sample is (t=.14). It is not significant at the 0.05 level. So there is no significant difference between mean pretest scores of Measure of secondary school students in experimental and control groups. The mean pretest score of the experimental group is almost the same as the mean control group.

The mean pretest scores of Measure in experimental and control groups of secondary school students are represented graphically in figure 85.

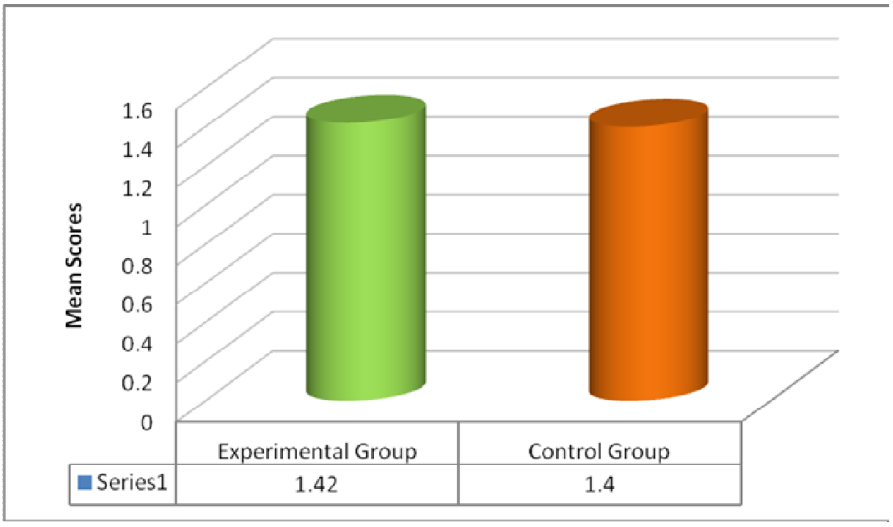


Figure 85. Comparison of the mean pretest scores of Measure in experimental and control groups

The graphical representation of mean pretest scores of Measure in the experimental and control groups shows that the mean performance of secondary school students in two groups is similar. This supports the result of mean difference analysis.

The mean difference analysis of pre test scores for the experimental group and control group of Process Skills in Social Science and its components of secondary school students showed the following results.

The pre test scores of experimental and control groups are not differ significantly in Process Skills in Social Science of secondary school students for the total sample and its components.

Comparison of Mean Pre-test and Mean Post-test Scores of Experimental Group of Process Skills in Social Science

To analyze whether the Process Skills in Social Science of the experimental group differ before and after teaching is an anchored instructional approach. The table given below shows the details.

Comparison of mean pretest and posttest scores of Process skills in social science in the experimental group.

To compare the pretest and posttest scores for Process Skills in Social Science of secondary school students of experimental group. The mean and standard deviations of pretest and posttest scores of Process skills in Social Science of experimental group was subjected to a test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 104.

Table 104

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Process skills in Social Science in Experimental Group

Experimental Group	Sample size	Mean	S.D.	t-value	Level of Significance	Effect size	Cohen's category
Pre-test	45	12.73	2.54	14.67**	0.01	2.972	Large
Post-test	45	22.96	4.14				

**P<0.01

It is clear from table 104 that the calculated t value obtained by the mean difference score of Process skills in the social science of the experimental group for the total sample is (t=14.67, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Process skills in the social science of secondary school students in the experimental group. The mean post-test score of experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Process skills in the social science of secondary school students.

The mean pretest scores and posttest scores of Process skills in social science in the experimental group of secondary school students are represented graphically in figure 86.

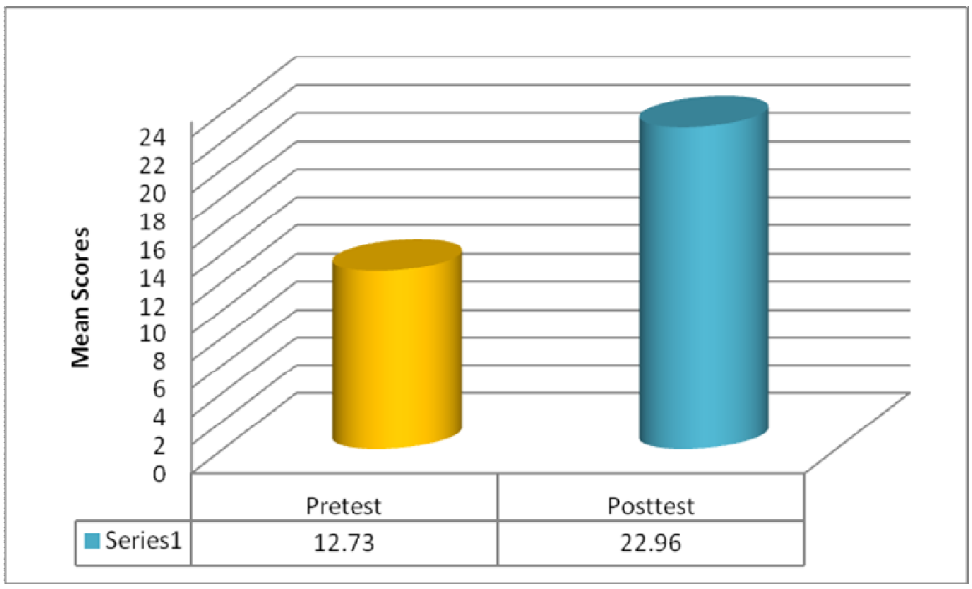


Figure 86. Comparison of the mean pretest posttest scores of Process skills in social science in experimental group

The graphical representation of mean pretest-posttest scores of Process skills in social science in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of Component Variable wise Pretest Posttest Scores of Experimental Group

Below given table shows eight component-wise pretests to posttest comparison of Process skills in social science within the experimental group. It shows the effect of the Anchored Instruction in each component of Process skills in social science.

Comparison of mean pretest and posttest scores of Process skills in social science component (classify) in the experimental group.

To compare the pretest and posttest scores of Classify of secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of classifying in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 105.

Table 105

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Process Skills in Social Science Component (Classify) in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Classify pretest	45	1.98	1.18	8.23**	0.01
	Classify posttest	45	3.58	0.54		

**P<0.01

It is clear from table 105 that the calculated t value obtained by the mean difference score of Measure of the experimental group for the total sample is (t=8.23, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Classify of secondary school students in the experimental group. The mean posttest score of the experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Classify of secondary school students.

The mean pretest scores and posttest scores of Classify in the experimental group of secondary school students are represented graphically in figure 87.

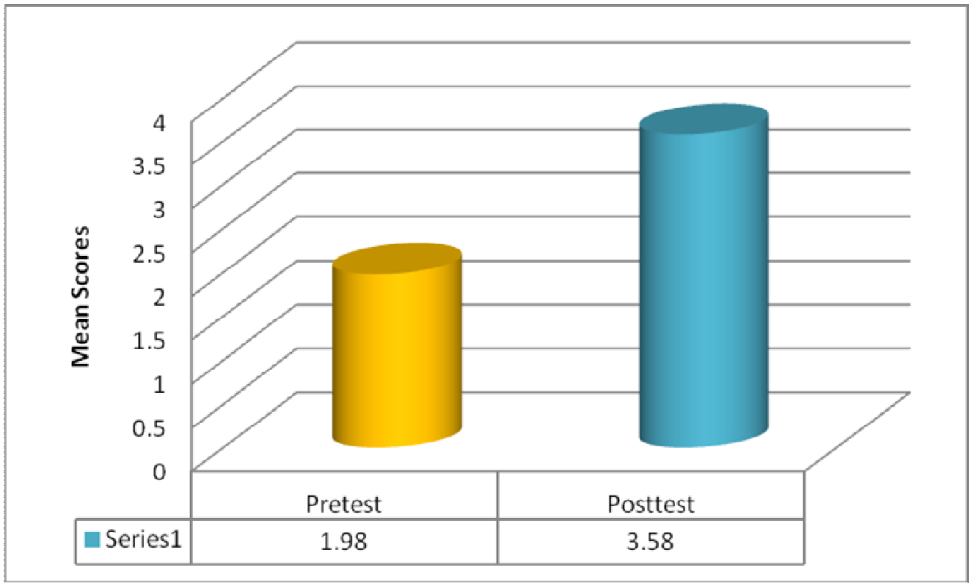


Figure 87. Comparison of the mean pretest posttest scores of Classify in Experimental group

The graphical representation of mean pretest-posttest scores of Classify in the experimental group shows that the mean performance of secondary school students in the group increasing from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process Skills in Social Science component (Observe) in the experimental group.

To compare the pretest and posttest scores of Observe of secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of Observe in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 106.

Table 106

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Observe in Experimental Group

Group	Variable	N	Mean	S.D.	t-value	Level of Significance
Experimental group	Observe pretest	45	2.18	0.65	10.5**	0.01
	Observe posttest	45	3.44	0.62		

**P<0.01

It is clear from table 106 that the calculated t value obtained by the mean difference score of Observe of the experimental group for the total sample is (t=10.5, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Observe of secondary school students in the experimental group. A mean post-test score of the experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Observe of secondary school students.

The mean pretest scores and posttest scores of Observe in the experimental group of secondary school students are represented graphically in figure 88.

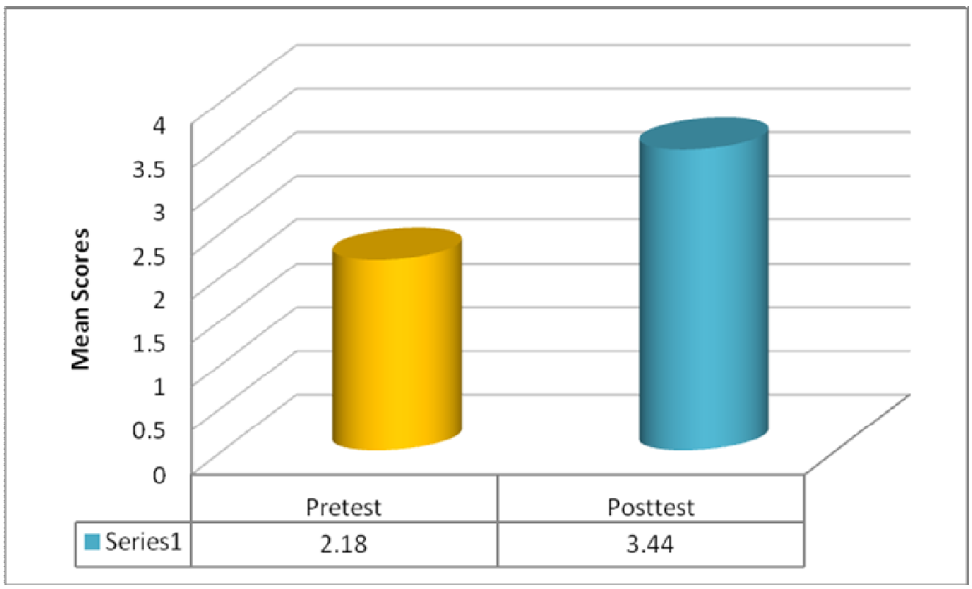


Figure 88. Comparison of the mean pretest posttest scores of Observe in Experimental group

The graphical representation of mean pretest-posttest scores of Observe in the experimental group shows that the mean performance of secondary school students in the group increasing from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of process skills in social science component (locate) in the experimental group.

To compare the pretest and posttest scores of locating secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of locating in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 107.

Table 107

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Locate in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Locate pretest	45	2.04	0.98	4.33**	0.01
	Locate posttest	45	2.80	.84		

**P<0.01

It is clear from table 107 that the calculated t value obtained by the mean difference score of Locate of the experimental group for the total sample is (t= 4.33, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Locate of secondary school students in the experimental group. The mean post-test score of the experimental group is almost same to mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Locate of secondary school students.

The mean pretest scores and posttest scores of Locate in an experimental group of secondary school students are represented graphically in figure 89.

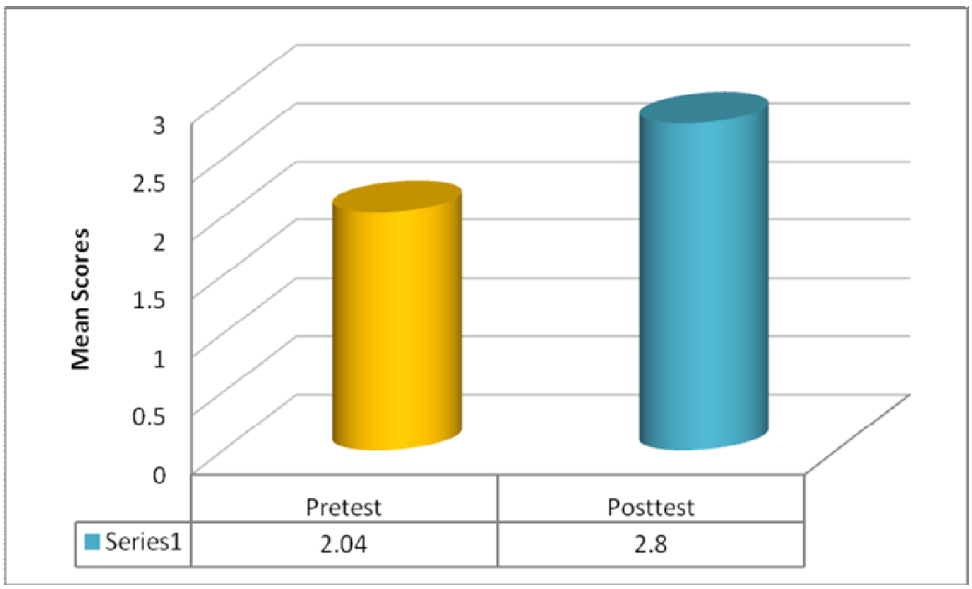


Figure 89. Comparison of the mean pretest posttest scores of Locate in Experimental group

The graphical representation of mean pretest-posttest scores of Locate in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (predict) in the experimental group.

To compare the pretest and posttest scores for Predict of secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of predict in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 108.

Table 108

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Predict in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Predict Pretest	45	1.58	0.84	11.37**	0.01
	Predict posttest	45	3.27	0.81		

**P<0.01

It is clear from table 108 that the calculated t value obtained by the mean difference score of Predict of the experimental group for the total sample is (t=11.37, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Predict of secondary school students in the experimental group. The mean post-test score of the experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Predict of secondary school students.

The mean pretest scores and posttest scores of Predict in the experimental group of secondary school students are represented graphically in figure 90.

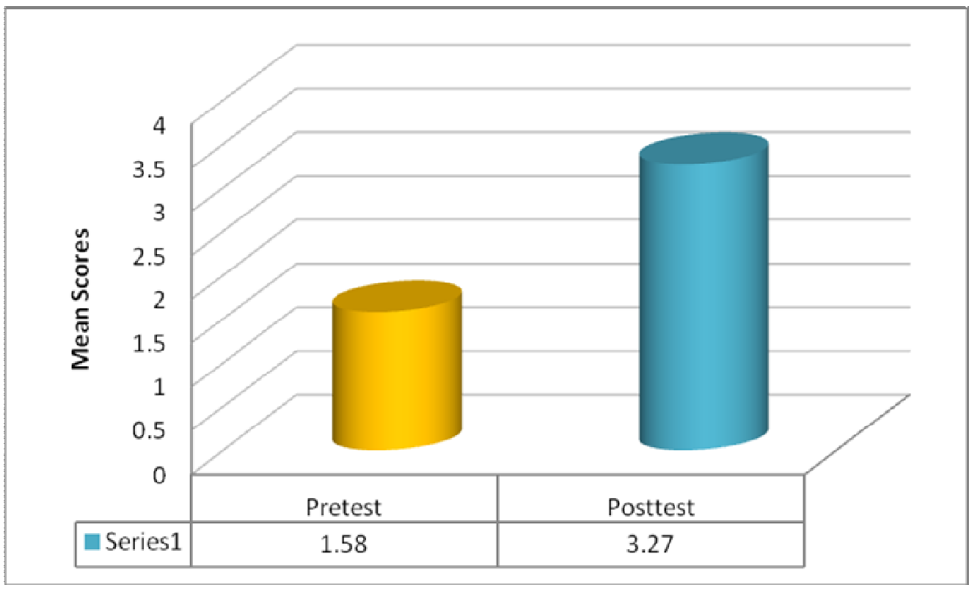


Figure 90. Comparison of the mean pretest posttest scores of Predict in Experimental group

The graphical representation of mean pretest-posttest scores of Predict in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (synthesize) in the experimental group

To compare the pretest and posttest scores of synthesizing secondary school students between experimental group. The mean and standard deviations of pretest and posttest scores of synthesizing in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 109.

Table 109

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Synthesize in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Synthesize pretest	45	1.02	0.69	2.79**	0.01
	Synthesize posttest	45	1.49	0.82		

**P<0.01

It is clear from table 109 that the calculated t value obtained by the mean difference score of Synthesize of the experimental group for the total sample is(t= 2.79, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Synthesize of secondary school students in the experimental group. The mean posttest score of the experimental group is almost the same as the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Synthesize of secondary school students.

The mean pretest scores and posttest scores of Synthesize in the experimental group of secondary school students are represented graphically in figure 91.

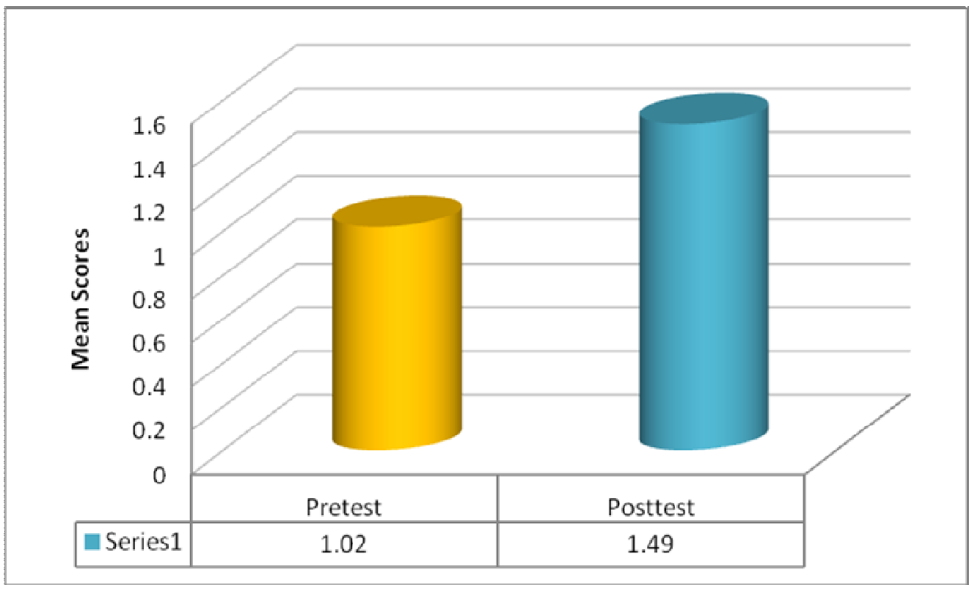


Figure 91. Comparison of the mean pretest posttest scores of Synthesize in Experimental group

The graphical representation of mean pretest-posttest scores of Synthesize in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of process skills in social science component (Evaluate) in the experimental group.

To compare the pretest and posttest scores for Evaluate of secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of Evaluate in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 110.

Table 110

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Evaluate in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Evaluate pretest	45	1.47	0.89	7.2**	0.01
	Evaluate posttest	45	2.84	1.15		

**P<0.01

It is clear from table 110 that the calculated t value obtained by the mean difference score of Evaluate of the experimental group for the total sample is (t=7.2, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Evaluate of secondary school students in the experimental group. The mean posttest score of the experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of evaluation of secondary school students.

The mean pretest scores and posttest scores of Evaluate in the experimental group of secondary school students are represented graphically in figure 92.

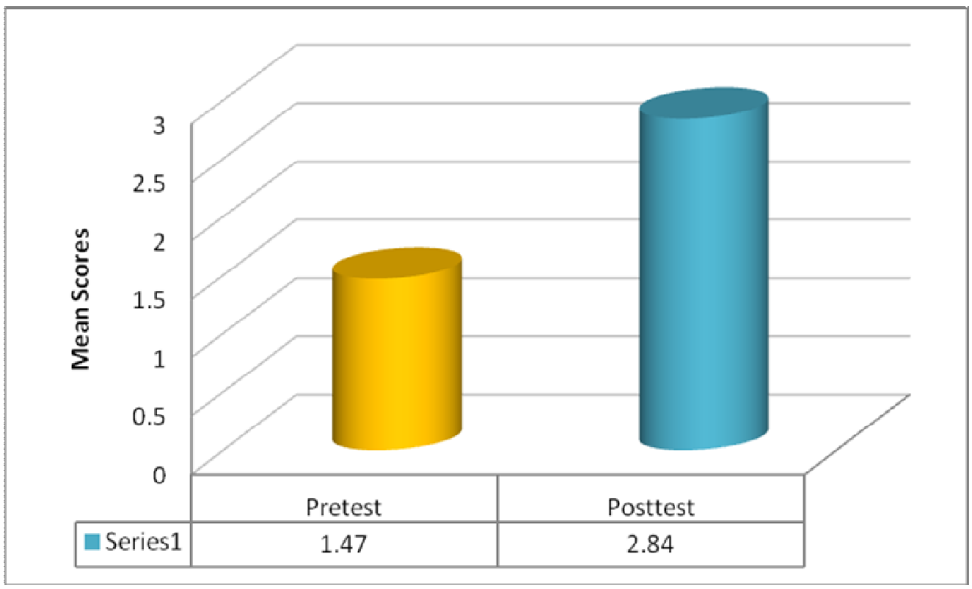


Figure 92. Comparison of the mean pretest posttest scores of Evaluate in Experimental group

The graphical representation of mean pretest-posttest scores of Evaluate in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Interpret) in the experimental group.

To compare the pretest and posttest scores for Interpret of secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of Interpret in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 111.

Table 111

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Interpret in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Interpret pretest	45	1.04	0.71	8.44**	0.01
	Interpret posttest	45	2.82	1.09		

**P<0.01

It is clear from table 111 that the calculated t value obtained by the mean difference score of Interpret of the experimental group for the total sample is (t=8.44, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of the Interpret of secondary school students in the experimental group. The mean post-test score of the experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Interpret of secondary school students.

The mean pretest scores and posttest scores of Interpret in the experimental group of secondary school students are represented graphically in figure 93.

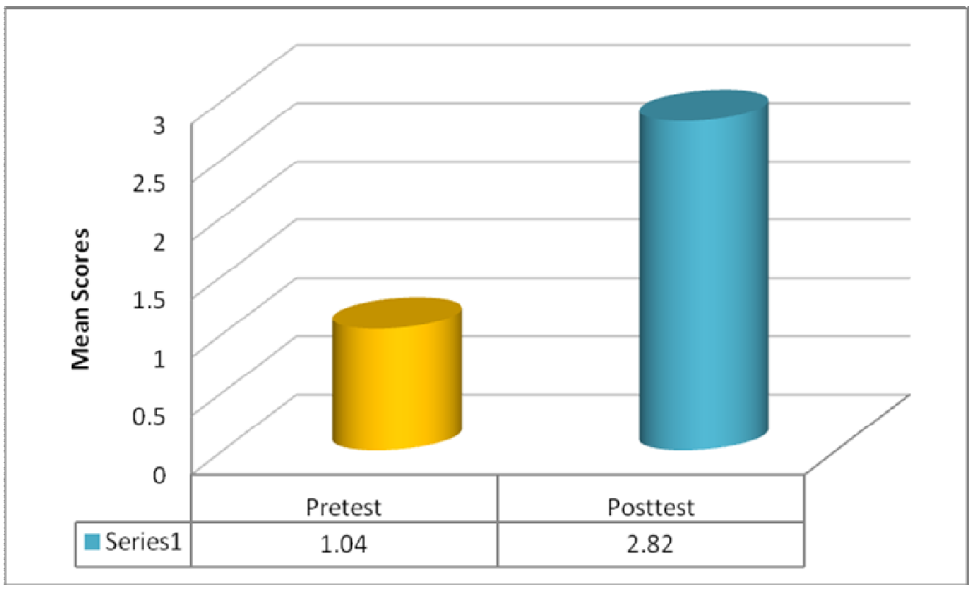


Figure 93. Comparison of the mean pretest posttest scores of Interpret in Experimental group

The graphical representation of mean pretest-posttest scores of Interpret in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of process skills in social science component (Measure) in the experimental group.

To compare the pretest and posttest scores for Measure of secondary school students in the experimental group. The mean and standard deviations of pretest and posttest scores of Measure in the experimental group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 112.

Table 112

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Measure in Experimental Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Experimental group	Measure pretest	45	1.42	0.72	7.21**	0.01
	Measure posttest	45	2.71	0.97		

**P<0.01

It is clear from table 112 that the calculated t value obtained by the mean difference score of Measure of the experimental group for the total sample is (t=7.21, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Measure of secondary school students in the experimental group. The mean posttest score of the experimental group is greater than the mean pretest score of the experimental group. Hence the Anchored Instructional Approach is effective in enhancing the level of Measure of secondary school students.

The mean pretest scores and posttest scores of Measure in the experimental group of secondary school students are represented graphically in figure 94.

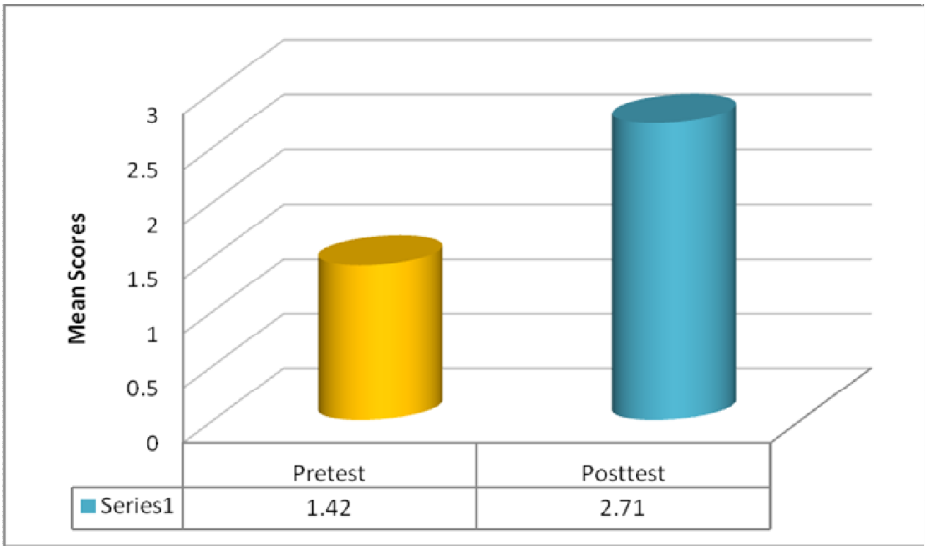


Figure 94. Comparison of the mean pretest posttest scores of Measure in Experimental group

The graphical representation of mean pretest-posttest scores of Measure in the experimental group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis.

The mean difference analysis of pre test and post test scores for the experimental group of Process Skills in Social Science and its components of secondary school students showed the following results.

The pre test post test scores of experimental group is differ significantly in Process Skills in Social Science of secondary school students for the total sample and its components.

Comparison of Mean Pre-test and Mean Post-test Scores of Process Skills in Social Science in the Control Group

Whether the emotional regulation of the control group differs before and after teaching with the existing method is to be analyzed. The table given below shows the details.

Comparison of mean pretest and posttest scores of Process skills in social science in the control group.

To compare the pretest and posttest scores of process skills in the social science of secondary school students of control groups. The mean and standard deviations of pretest and posttest scores of process skills in social science in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 113.

Table 113

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Process Skills in Social Science in Control Group

Control Group	Sample size	Mean	S.D.	t-value	Level of Significance	Effect size	Cohen's Category
Pre-test	45	12.44	2.16	13.21**	0.01	2.162	Large
Post-test	45	20.33	4.67				

**P<0.01

It is clear from table 113 that the calculated t value obtained by the mean difference score of Process skills in the social science of the control group for the total sample is (t=13.21, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Process skills in the social science of secondary school students in the control group. The mean posttest score of the control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Process skills in the social science of secondary school students.

The mean pretest scores and posttest scores of Process skills in social science in the control group of secondary school students are represented graphically in figure 95.

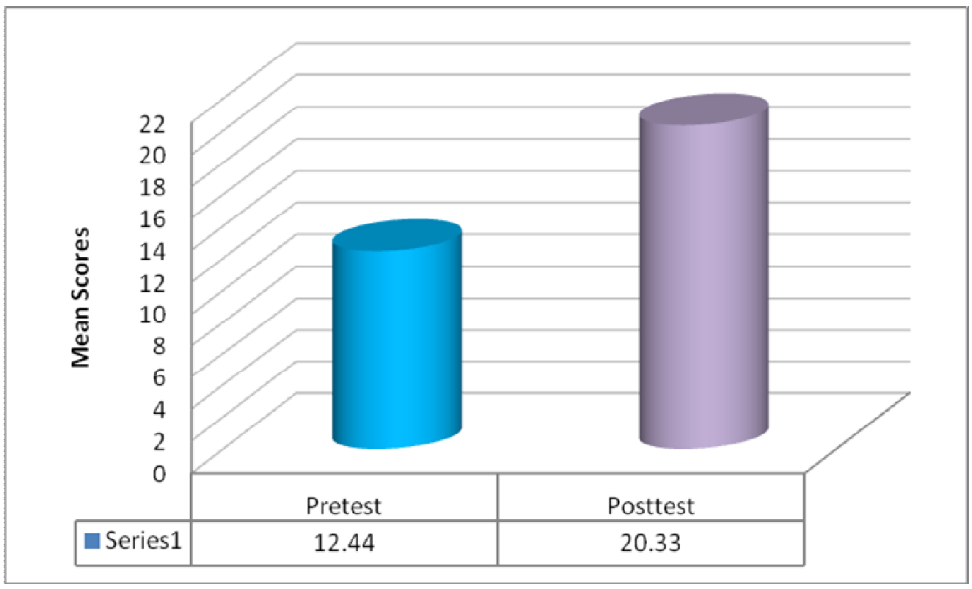


Figure 95. Comparison of the mean pretest posttest scores of Process skills in social science in control group

The graphical representation of mean pretest-posttest scores of Process skills in social science in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Classify) in the control group.

To compare the pretest and posttest scores of process skills in the social science of secondary school students of control group. The mean and standard deviations of pretest and posttest scores of process skills in social science in control group was subjected to a test of significance of the

difference between means. The details of the t-test for the total sample are presented in the table 114.

Table 114

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Classify in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Classify pretest	45	1.98	1.18	8.49**	0.01
	Classify posttest	45	3.62	0.49		

**P<0.01

It is clear from table 114 that the calculated t value obtained by the mean difference score of Classify of the control group for the total sample is (t=8.49, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Classify of secondary school students in the control group. The mean posttest score of the control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Measure of secondary school students.

The mean pretest scores and posttest scores of Classify in the control group of secondary school students are represented graphically in figure 96.

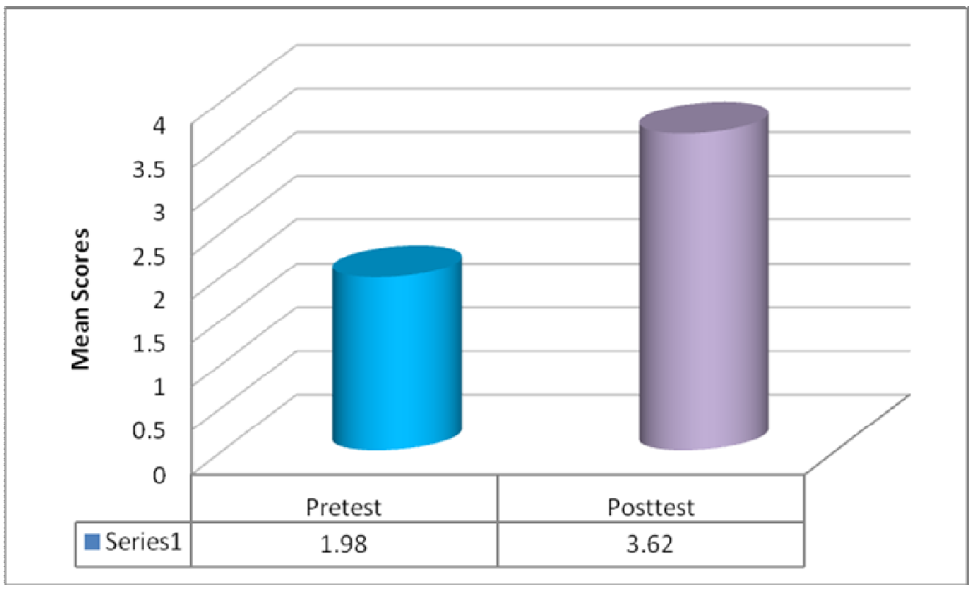


Figure 96. Comparison of the mean pretest posttest scores of Classify in Control group

The graphical representation of mean pretest-posttest scores of Classify in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of process skills in social science component (Observe) in the control group.

To compare the pretest and posttest scores of process skills in Observe of secondary school students of control group. The mean and standard deviations of pretest and posttest scores of Observe in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 115.

Table 115

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Observe in Control Group

Group	Variable	N	Mean	S.D.	t-value	Level of Significance
Control group	Observe pretest	45	2.13	.72614	11.09**	0.01
	Observe posttest	45	3.51	0.63		

**P<0.01

It is clear from table 115 that the calculated t value obtained by the mean difference score of Observe of the control group for the total sample is (t=11.09, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Observe of secondary school students in the control group. The mean post-test score of the control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Observe of secondary school students.

The mean pretest scores and posttest scores of Observe in a control group of secondary school students are represented graphically in figure 97.

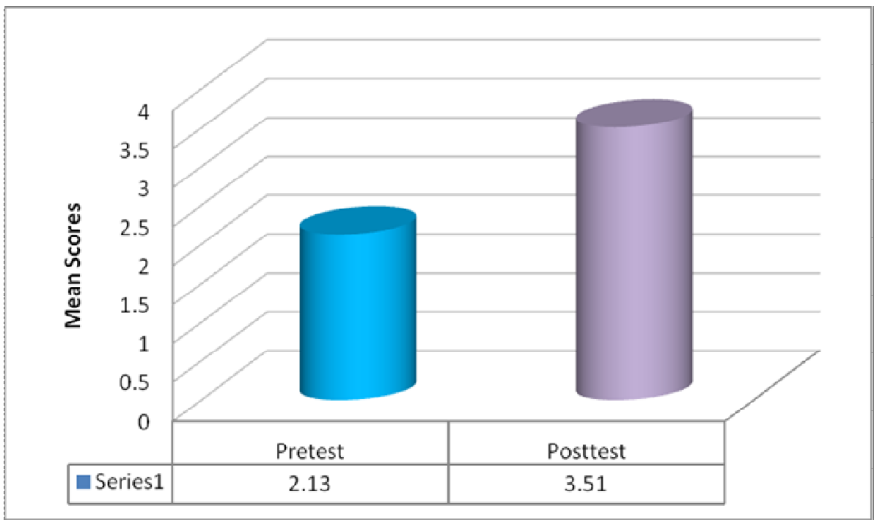


Figure 97. Comparison of the mean pretest posttest scores of Observe in control group

The graphical representation of mean pretest-posttest scores of Observe in control group shows that the mean performance of secondary school students increased from pretest to post test. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of process skills in social science component (Locate) in the control group.

To compare the pretest and posttest scores of process skills in social science for Locate of secondary school students of the control group. The mean and standard deviations of pretest and posttest scores of Locate in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 116.

Table 116

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Locate in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Locate pretest	45	2.04	0.98	1.39	N.S
	Locate posttest	45	2.38	1.13		

N.S =Not Significant

It is clear from table 116 that the calculated t value obtained by the mean difference score of Locate of the control group for the total sample is (t=1.39). It is not significant at the 0.05 level. So there is no significant difference between mean pretest and posttest scores of Locate of secondary school

students in the control group. The mean posttest score of a control group is almost the same as the mean pretest score of the control group. Hence the Existing Method of Teaching is not effective in enhancing the level of Locate of secondary school students.

The mean pretest scores and posttest scores of Locate in a control group of secondary school students are represented graphically in figure 98.

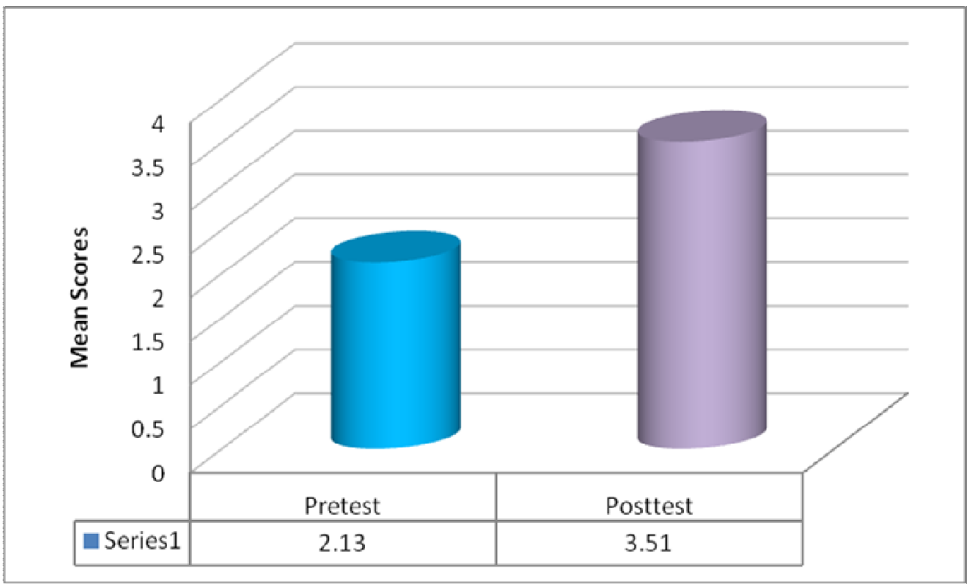


Figure 98. Comparison of the mean pretest posttest scores of Locate in control group

The graphical representation of mean pretest-posttest scores of Locate in the control group shows that the mean performance of secondary school students are almost similar between pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Predict) in the control group.

To compare the pretest and posttest scores of process skills in Social Science for Predict of secondary school students of control group. The mean and

standard deviations of pretest and posttest scores of Predict in control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 117

Table 117

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Predict in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Predict pretest	45	1.56	.87	8.39**	0.01
	Predict posttest	45	2.89	.96		

**P<0.01

It is clear from table 117 that the calculated t value obtained by the mean difference score of Predict of the control group for the total sample is (t=8.39, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Predict of secondary school students in the control group. The mean post-test score of a control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Predict of secondary school students.

The mean pretest scores and posttest scores of Predict in a control group of secondary school students are represented graphically in figure 99.

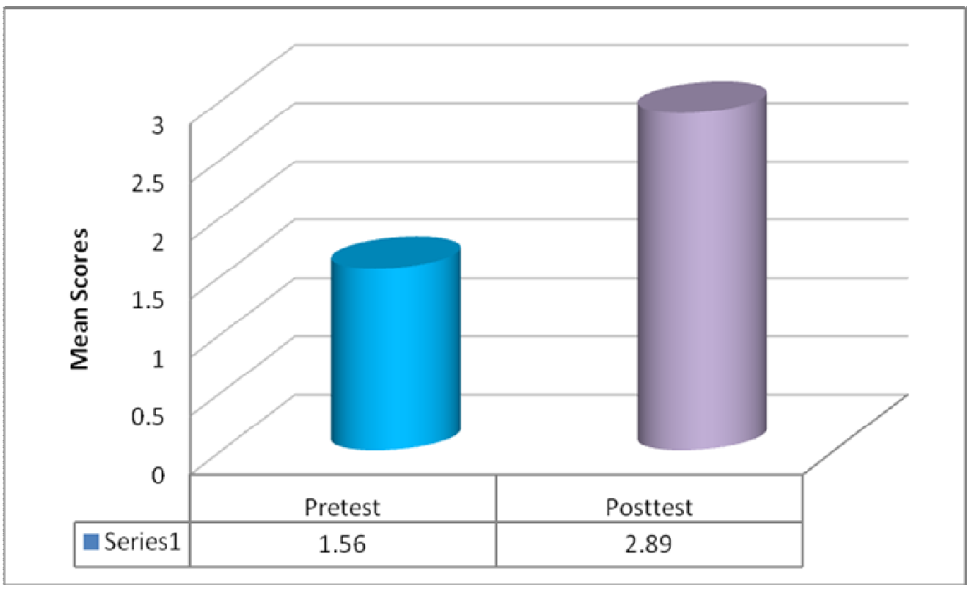


Figure 99. Comparison of the mean pretest posttest scores of Predict in control group

The graphical representation of mean pretest-posttest scores of Predict in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Synthesize) in the control group.

To compare the pretest and posttest scores of process skills in Social Science for Synthesize of secondary school students of control group. The mean and standard deviations of pretest and posttest scores of Synthesize in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 118.

Table 118

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Process Skills in Social Science Component (Synthesize) in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Synthesize pretest	45	0.87	0.67	1.49	N.S
	Synthesize posttest	45	1.09	0.85		

N.S =Not Significant

It is clear from table 118 that the calculated t value obtained by the mean difference score of Synthesize of the control group for the total sample is (t=1.49). It is not significant at the 0.05 level. So there is no significant difference between mean pretest and posttest scores of Synthesize of secondary school students in the control group. The mean posttest score of the control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Synthesize of secondary school students.

The mean pretest scores and posttest scores of Synthesize in a control group of secondary school students are represented graphically in figure 100.

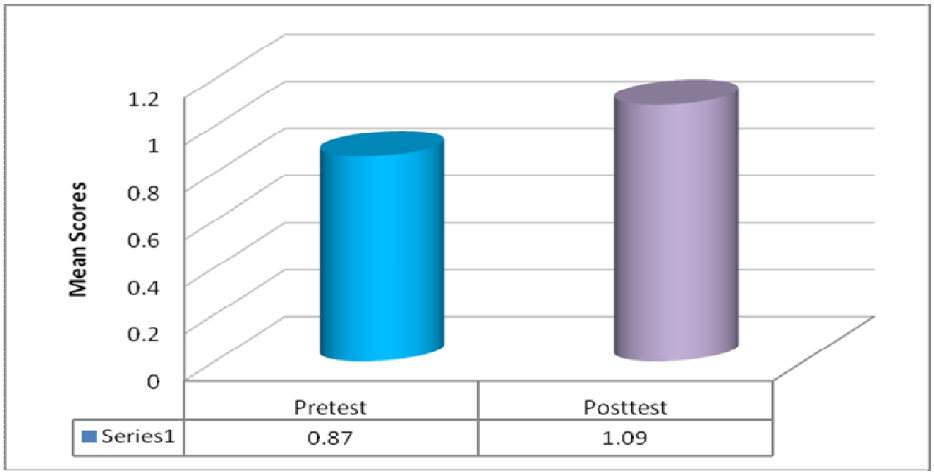


Figure 100. Comparison of the mean pretest posttest scores of Synthesize in control group

The graphical representation of mean pretest-posttest scores of Synthesize in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Evaluate) in the control group.

To compare the pretest and posttest scores of process skills in Social Science for Evaluate of secondary school student of control group. The mean and standard deviations of pretest and posttest scores of Evaluate in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 119.

Table 119

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Evaluate in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Evaluate pretest	45	1.44	0.92	3.8**	0.01
	Evaluate posttest	45	2.33	1.28		

**P<0.01

It is clear from table 119 that the calculated t value obtained by the mean difference score of Evaluate of the control group for the total sample is (t=3.8, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of evaluation of secondary school students in the control group. The mean post-test score of a control group is

greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of evaluation of secondary school students.

The mean pretest scores and posttest scores of Evaluate in a control group of secondary school students are represented graphically in figure 101.

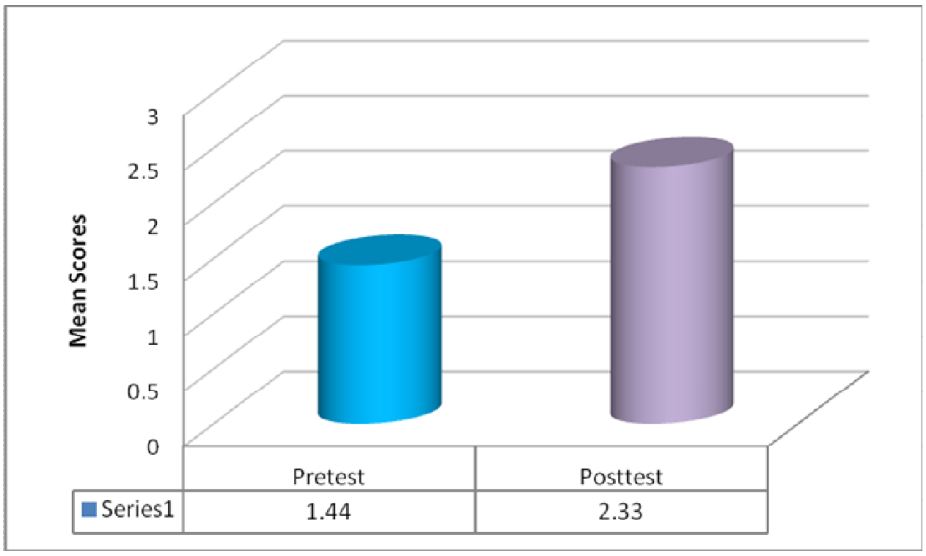


Figure 101. Comparison of the mean pretest posttest scores of Evaluate in control group

The graphical representation of mean pretest-posttest scores of Evaluate in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Interpret) in the control group.

To compare the pretest and posttest scores of process skills in Social Science for Interpret of secondary school students of control group. The mean

and standard deviations of pretest and posttest scores of Interpret in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 120.

Table 120

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Interpret in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Interpret pretest	45	1.02	0.69	5.37**	0.01
	Interpret posttest	45	2.27	1.30		

**P<0.01

It is clear from table 120 that the calculated t value obtained by the mean difference score of Interpret of the control group for the total sample is (t=5.37, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of the Interpret of secondary school students in the control group. The mean post-test score of the control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Interpret of secondary school students.

The mean pretest scores and posttest scores of Interpret in a control group of secondary school students are represented graphically in figure 102.

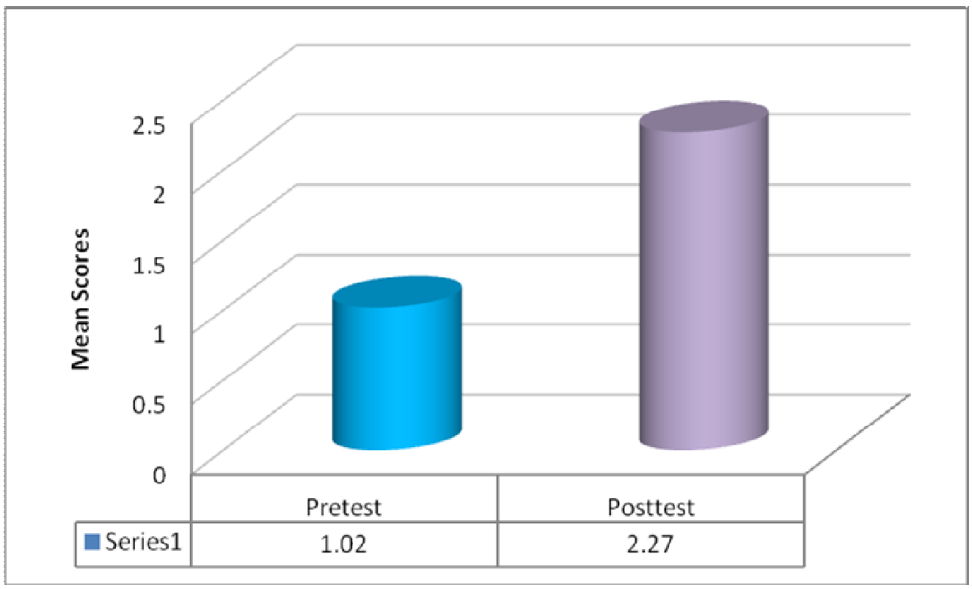


Figure 102. Comparison of the mean pretest posttest scores of Interpret in control group

The graphical representation of mean pretest-posttest scores of Interpret in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis

Comparison of mean pretest and posttest scores of Process skills in social science component (Measure) in the control group.

To compare the pretest and posttest scores of process skills in Social Science for Measure of secondary school students of control group. The mean and standard deviations of pretest and posttest scores of Measure in control group was subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 121.

Table 121

Result of Test of Significance of Difference between Mean Pretest and Posttest Scores of Measure in Control Group

Group	Variable	N	Mean	S.D	t-value	Level of Significance
Control group	Measure pretest	45	1.40	0.75	5.5**	0.01
	Measure posttest	45	2.27	0.98		

**P<0.01

It is clear from table 121 that the calculated t value obtained by the mean difference score of Measure of the control group for the total sample is (t=5.5, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean pretest and posttest scores of Measure of secondary school students in the control group. The mean posttest score of a control group is greater than the mean pretest score of the control group. Hence the Existing Method of Teaching is effective in enhancing the level of Measure of secondary school students.

The mean pretest scores and posttest scores of Measure in a control group of secondary school students are represented graphically in figure 103.

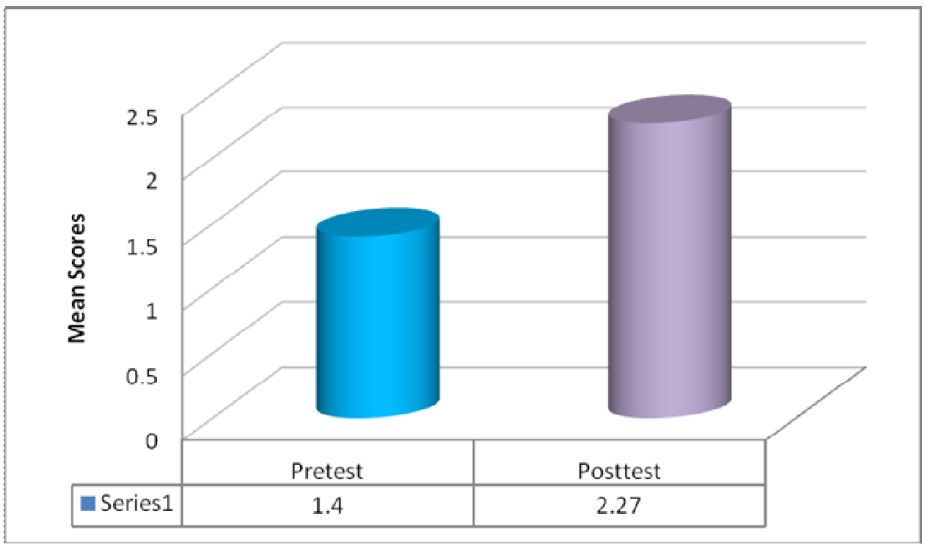


Figure 103. Comparison of the mean pretest posttest scores of Measure in control group

The graphical representation of mean pretest-posttest scores of Measure in the control group shows that the mean performance of secondary school students increased from pretest to posttest. This supports the result of mean difference analysis.

The mean difference analysis of pre test and post test scores for the control group of Process Skills in Social Science and its components of secondary school students showed the following results.

The pre test post test scores of control group is differ significantly in Process Skills in Social Science of secondary school students for the total sample and its components except locate and synthesis.

Comparison of Mean Post-test Scores of Experimental and Control Group of Process Skills in Social Science

To analyze whether the Process Skills in Social Science of the experimental and control groups differ after teaching with Anchored

Instructional Approach and the Existing Method of Teaching. The table given below shows the details

Comparison of mean posttest scores of Process skills in social science in the experimental and control group.

To compare the mean posttest scores for Process Skills in Social Science of secondary school students of experimental and control groups. The mean and standard deviations of posttest scores of Process skills in Social Science of experimental and control groups were subjected to test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 122.

Table 122

Result of Test of Significance of Difference between Mean posttest Scores of Process Skills in Social Science between Experimental and Control Group

Groups Compared	Sample size	Mean	S.D.	t-value	Level of Significance	Effect size	Cohen's Category
Experimental Group	45	22.96	4.14	2.81**	0.01	0.59	Medium
Control Group	45	20.33	4.69				

**P<0.01

It is clear from the table 122 that the calculated t value obtained by the mean posttest scores of Process skills in the experimental and control group for the total sample is (t=2.81, P<0.01). It is significant at the 0.01 level. So there is a significant difference between mean posttest scores of the Process skills of secondary school students in experimental and control groups. The mean

scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of process skills of secondary school students.

Since the mean difference was found to be significant, the effect size was calculated. The value of Cohen's d is 0.59 which is greater than the limit set for the medium effect in Cohen's category. It means that the Anchored Instructional Approach has a medium effect in enhancing the process skills of secondary school students of Kerala when compared to the Existing Method of Teaching.

The mean posttest scores of process skill in the experimental and control groups of secondary school students are represented graphically in figure 104.

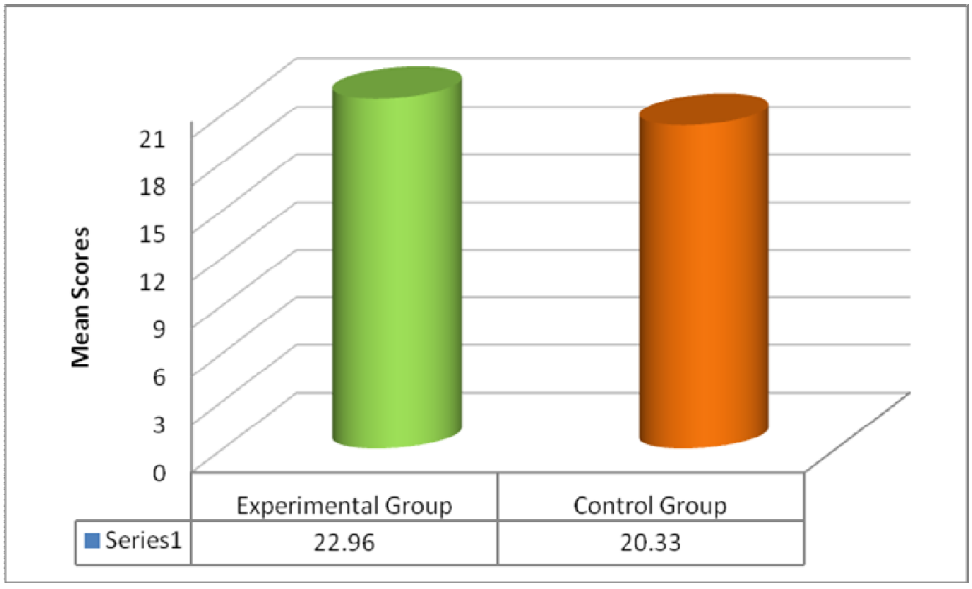


Figure 104. Comparison of the mean posttest scores of Process Skills in Experimental and control groups

The graphical representation of mean posttest scores of Process skills in experimental and control group shows that the mean performance of secondary school students in two groups are not similar and in a mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of the Mean Posttest Scores of Process Skills in Social Science Component (Classify) between an Experimental and Control Group

Below given table shows Eight component-wise posttest scores comparison between the experimental and control group. It will help to identify the difference in the effect of the Anchored Instruction and Existing Method of Teaching in each component of Process Skills in Social Science.

Comparison of mean posttest scores of Process skills in social science component (classify) in the experimental and control group

To compare the posttest scores of Classify of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Classify experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 123.

Table 123

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Classify) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Classify posttest	Experimental group	45	3.58	.54	.41	N.S
	Control group	45	3.62	.49		

N.S =Not Significant

It is clear from the table 123 that the calculated t value obtained by the mean posttest scores of classifying in the experimental and control group for the total sample is (t=.41). It is not significant at the 0.05 level. So there is no significant difference between mean posttest scores of classifying of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and existing method of teaching have similar effect in enhancing the level of the component of Process Skills in Social Science (classify) of secondary school students.

The mean posttest scores of classifying in the experimental and control group of secondary school students are represented graphically in figure 105.

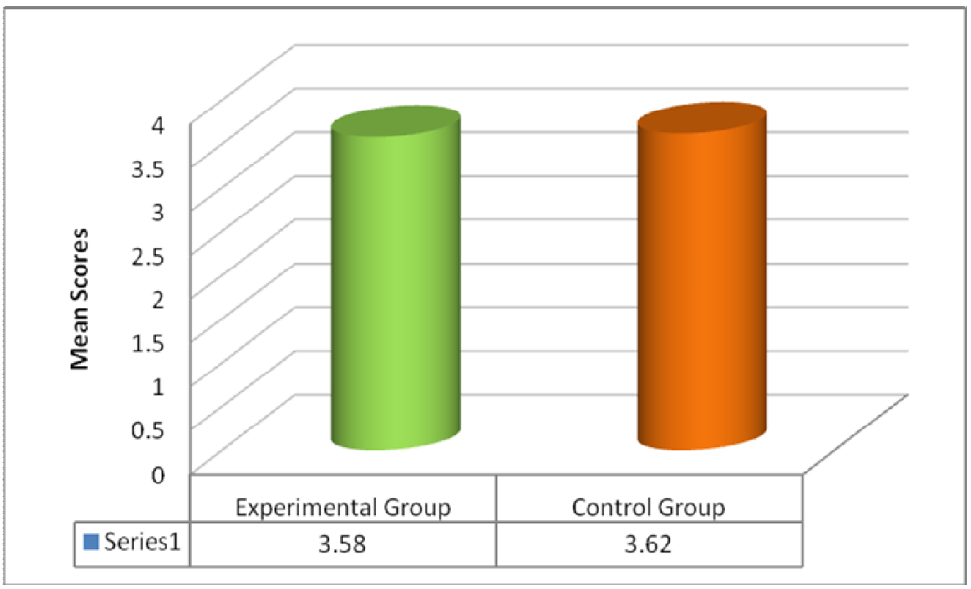


Figure 105. Comparison of the mean posttest scores of Classify in Experimental and control group

The graphical representation of mean posttest scores of Classify in experimental and control group shows that the mean performance of secondary school students in two groups are almost same. This supports the result of mean difference analysis

Comparison of mean posttest scores of Process skills in social science component (Observe) in the experimental and control group.

To compare the posttest scores of Observe of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of observe experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 124.

Table 124

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Observe) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Observe posttest	Experimental group	45	3.44	.62	.51	N.S
	Control group	45	3.50	.626		

N.S =Not Significant

It is clear from the table 124 that the calculated t value obtained by the mean posttest scores of Observe in the experimental and control group for the total sample is (t=.51). It is not significant at the 0.05 level. So there is no significant difference between mean posttest scores of Observe of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and existing method of teaching have the same effect in enhancing the level for the component of Process Skills in Social Science (Observe) of secondary school students.

The mean posttest scores of observe in the experimental and control group of secondary school students are represented graphically in figure 106.

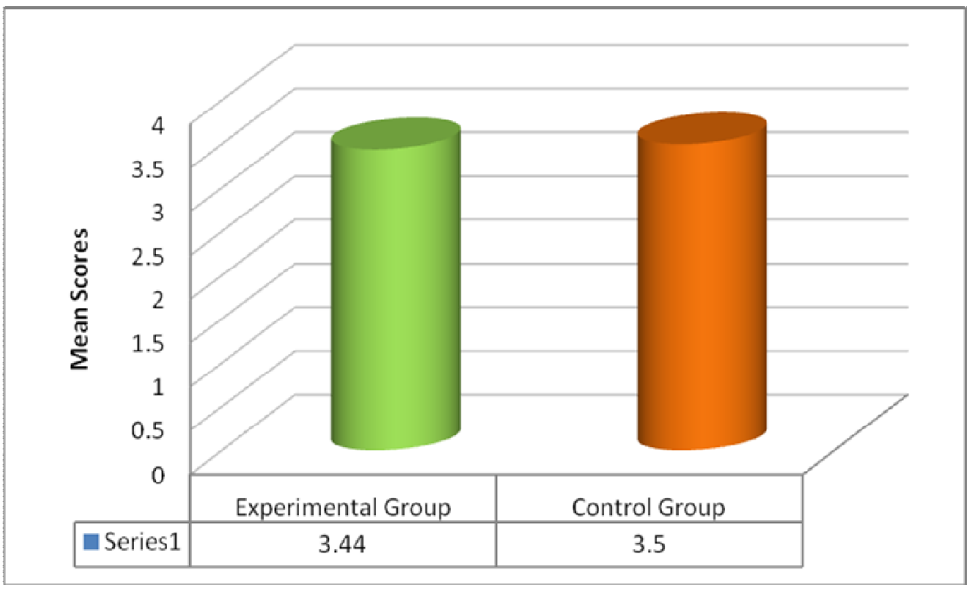


Figure 106. Comparison of the mean posttest scores of Observe in Experimental and control group

The graphical representation of mean posttest scores of Observe in experimental and control group shows that the mean performance of secondary school students in two groups are almost same. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Process skills in social science component (Locate) in the experimental and control group.

To compare the posttest scores of Locate secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Locate experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 125.

Table 125

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Locate) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Locate posttest	Experimental group	45	2.80	0.84	2.01*	0.5
	Control group	45	2.38	1.13		

*P<0.05

It is clear from the table that the calculated t value obtained by the mean posttest scores of Locate in the experimental and control group for the total sample is (t=2.01, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean posttest scores of Locate of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost same. Hence the Anchored Instructional Approach is effective for enhancing the level for the component of Process Skills in Social Science (Observe) of secondary school students than the existing method of teaching.

The mean posttest scores of Locate in the experimental and control group of secondary school students are represented graphically in figure 107.

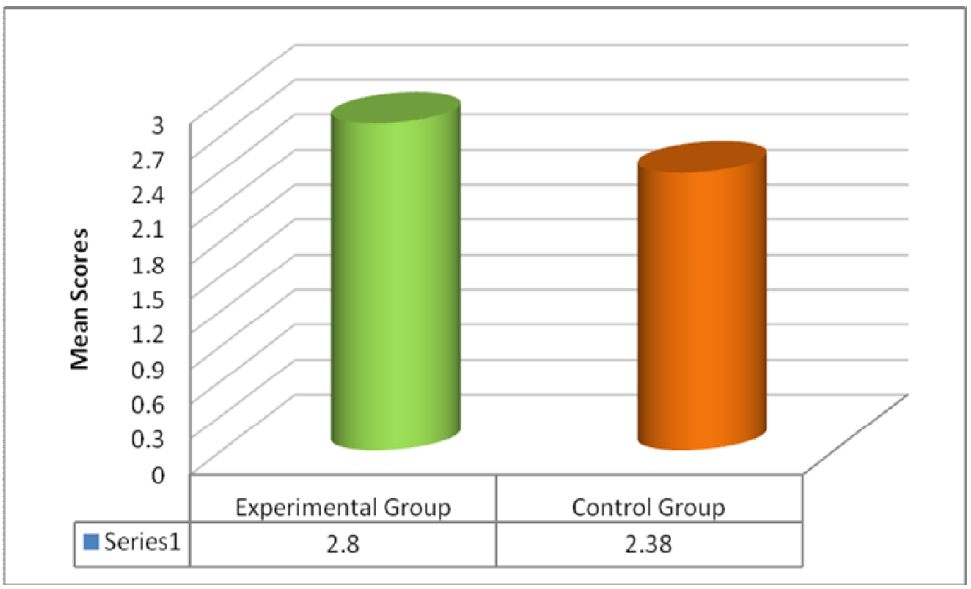


Figure 107. Comparison of the mean posttest scores of Locate in Experimental and control group

The graphical representation of mean posttest scores of Locate in the experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in a mean scores the experimental group and control group are almost the same. This supports the result of mean difference analysis

Comparison of mean posttest scores of Process skills in social science component (Predict) in the experimental and control group.

To compare the posttest scores of Predict of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Predict experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 126.

Table 126

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Predict) between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Predict posttest	Experimental group	45	3.27	.81	2.02*	.05
	Control group	45	2.89	.96		

*P<0.05

It is clear from the table 126 that the calculated t value obtained by the mean posttest scores of Predict in the experimental and control group for the total sample is (t=2.02, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean posttest scores of Predict of secondary school students in experimental and control groups. The mean scores of the experimental group are Greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of Predict of secondary school students.

The mean posttest scores of predict in the experimental and control group of secondary school students are represented graphically in figure 108.

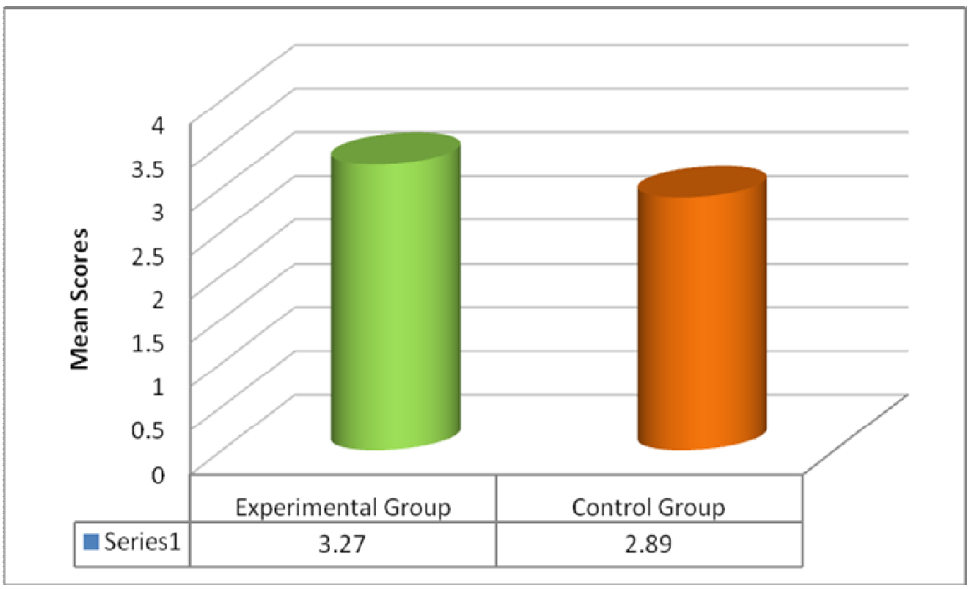


Figure 108. Comparison of the mean posttest scores of Predict in Experimental and control group

The graphical representation of mean posttest scores of Predict in experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in a mean scores, the experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean posttest scores of Process skills in social science component (Synthesize) in the experimental and control group.

To compare the posttest scores of Synthesize of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Synthesize experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 127.

Table 127

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Synthesize) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Synthesize posttest	Experimental group	45	1.49	0.82	2.28*	0.05
	Control group	45	1.09	0.85		

*P<0.05

It is clear from the table 127 that the calculated t value obtained by the mean posttest scores of synthesizing in the experimental and control group for the total sample is (t=2.28, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean posttest scores of synthesizing secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach is effective in enhancing the level of synthesizing secondary school students.

The mean posttest scores of synthesizing in the experimental and control group of secondary school students are represented graphically in figure 109.

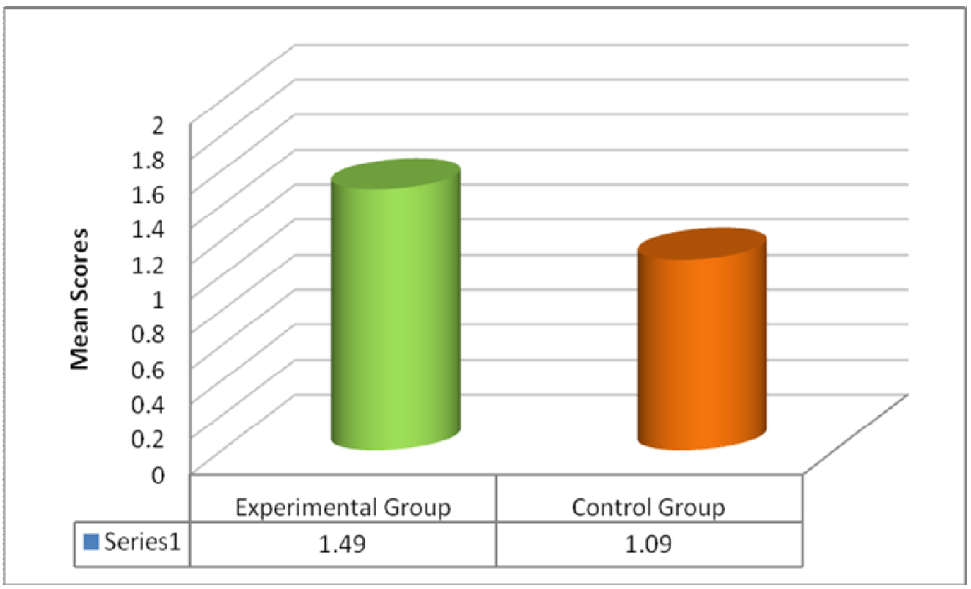


Figure 109. Comparison of the mean posttest scores of Synthesize in Experimental and control group

The graphical representation of mean posttest scores of synthesizing in experimental and control groups shows that the mean performance of secondary school students in two groups are not similar and in a mean score, the experimental group and the control group are almost the same. This supports the result of mean difference analysis

Comparison of mean posttest scores of Process skills in social science component (Evaluate) in the experimental and control group.

To compare the posttest scores of Evaluate of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores to Evaluate experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 128.

Table 128

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Evaluate) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Evaluate posttest	Experimental group	45	2.84	1.15	1.99*	0.05
	Control group	45	2.33	1.28		

*P<0.05

It is clear from the table 128 that the calculated t value obtained by the mean posttest scores of evaluate in the experimental and control group for the total sample is (t=1.99, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean posttest scores of evaluating secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach is effective in enhancing the level of evaluate secondary school students.

The mean posttest scores of evaluate in the experimental and control group of secondary school students are represented graphically in figure 110.

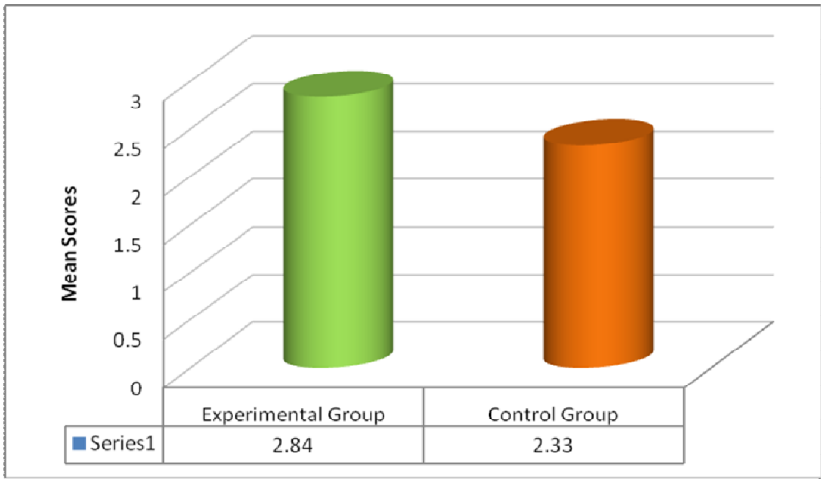


Figure 110. Comparison of the mean posttest scores of Evaluate in Experimental and control group

The graphical representation of mean posttest scores of evaluate in experimental and control group shows that the mean performance of secondary school students in two groups are not similar and in mean scores, the experimental group and the control group are almost the same. This supports the result of mean difference analysis

Comparison of mean posttest scores of Process skills in social science component (Interpret) in the experimental and control group.

To compare the posttest scores of the Interpret of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Interpret experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 129.

Table 129

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Interpret) between Experimental and Control Group

Variable	Group	N	Mean	Standard Deviation	t-value	Level of Significance
Interpret posttest	Experimental group	45	2.82	1.09	2.19*	0.5
	Control group	45	2.27	1.30		

*P<0.05

It is clear from the table 129 that the calculated t value obtained by the mean posttest scores of interpret in the experimental and control group for the total sample is (t=2.19, P<0.05). It is significant at the 0.05 level. So there is a

significant difference between mean posttest scores of interpret of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach is effective in enhancing the level of interpret of secondary school students.

The mean posttest scores of interpret in the experimental and control group of secondary school students are represented graphically in figure 111.

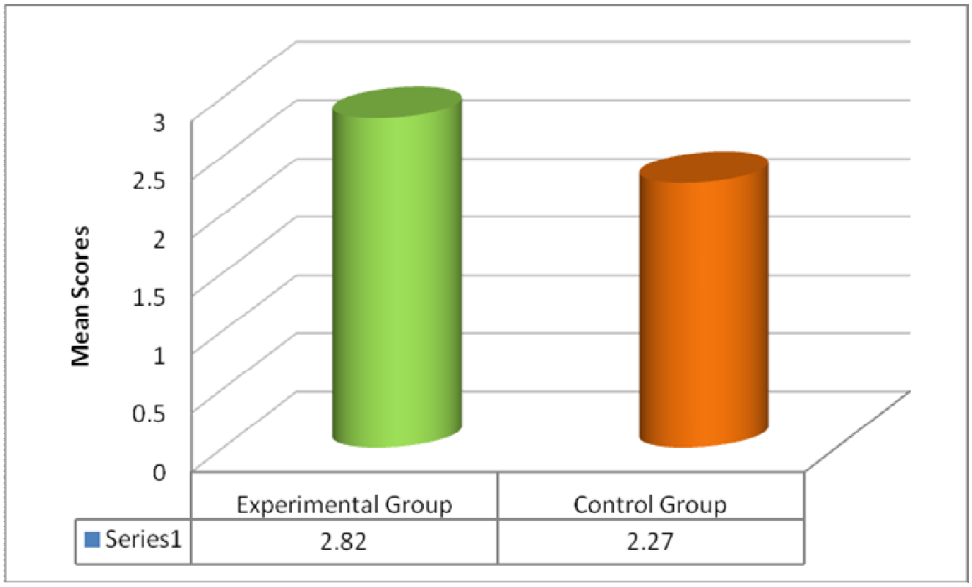


Figure 111. Comparison of the mean posttest scores of Interpret in Experimental and control group

The graphical representation of mean posttest scores of interpreting in the experimental and control group shows that the mean performance of secondary school students in two groups is not similar and in the mean scores experimental group and the control group are almost same. This supports the result of mean difference analysis.

Comparison of mean posttest scores of Process skills in social science component (Measure) in the experimental and control group.

To compare the posttest scores of Measure of secondary school students between experimental and control groups. The mean and standard deviations of posttest scores of Measure experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 130.

Table 130

Result of Test of Significance of Difference between Mean Posttest Scores of Process Skills in Social Science Component (Measure) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Measure posttest	Experimental group	45	2.71	0.97	2.16*	0.05
	Control group	45	2.27	0.99		

*P<0.05

It is clear from the table 130 that the calculated t value obtained by the mean posttest scores of measure in the experimental and control group for the total sample is (t=2.16, P<0.05). It is significant at the 0.05 level. So there is a significant difference between mean posttest scores of measure of secondary school students in experimental and control groups. The mean scores of the experimental group and the control groups are almost the same. Hence the Anchored Instructional Approach is effective in enhancing the level of measure of secondary school students.

The mean posttest scores of measure in the experimental and control group of secondary school students are represented graphically in figure 112.

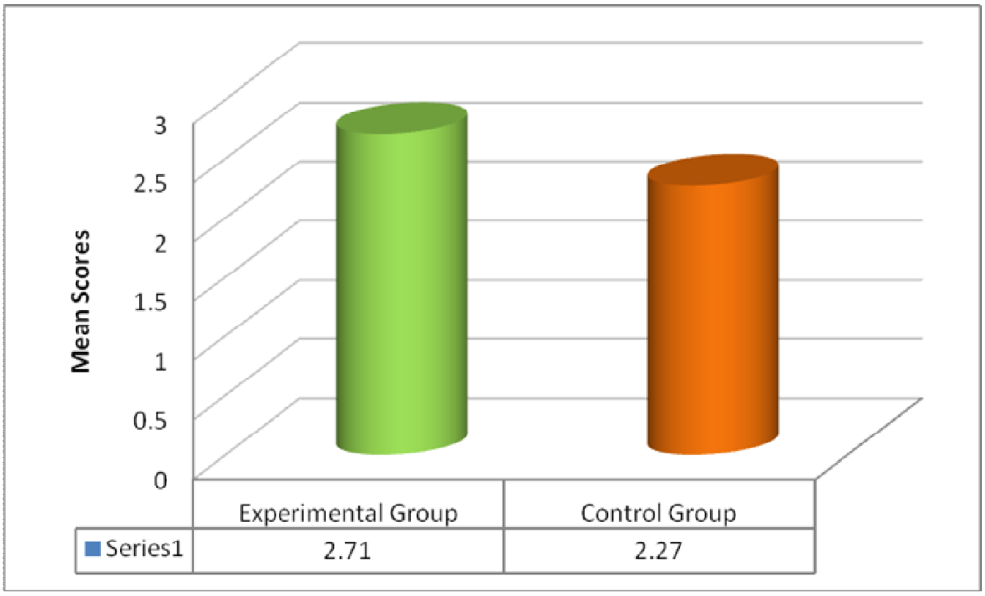


Figure 112. Comparison of the mean posttest scores of Measure in Experimental and control group

The graphical representation of mean posttest scores of measure in the experimental and control group shows that the mean performance of secondary school students in two groups are not similar and in a mean score, the experimental group and the control group are almost the same. This supports the result of mean difference analysis.

The mean difference analysis of post test scores between experimental and control groups of Process Skills in Social Science and its components of secondary school students showed the following results.

The post test scores of experimental and control groups are differ significantly in Process Skills in Social Science of secondary school students for the total sample and its components except classify and Observe.

Comparison of Mean Gain Scores of Experimental and Control Group in Process Skills in Social Science

To analyze differences in the effect of both anchored instructional approach and the existing method of teaching on process skills in the social science of experimental and control groups. Table 131 given below shows the details.

Comparison of mean gain scores of process skills in social science component in the experimental and control group.

To compare the gain scores of Process Skills in Social Science of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of process skills in social science experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 131.

Table 131

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science between Experimental and Control Group

Groups Compared	Sample size	Mean	S.D.	t-value	Level of Significance	Effect size	Cohen's Category
Experimental Group	45	10.22	4.68	2.54*	0.05	.54	Medium
Control Group	45	7.89	4.00				

*P<0.05

It is clear from the table 131 that the calculated t value obtained by the mean gain scores of Process skills in the experimental and control group for the total sample is ($t=2.54$, $P<0.05$). It is significant at the 0.05 level. So there is a significant difference between mean gain scores of the Process skills of secondary school students in experimental and control groups. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach is effective in enhancing the level of process skills of secondary school students.

Since the mean difference was found to be significant, the effect size was calculated. The value of Cohen's d is 0.54 which is greater than the limit set for the medium effect in Cohen's category. It means that the Anchored Instructional Approach has a medium effect in enhancing the process skills of secondary school students of Kerala when compared to the Existing Method of Teaching.

The mean gain scores of process skill in the experimental and control group of secondary school students are represented graphically in figure 113.

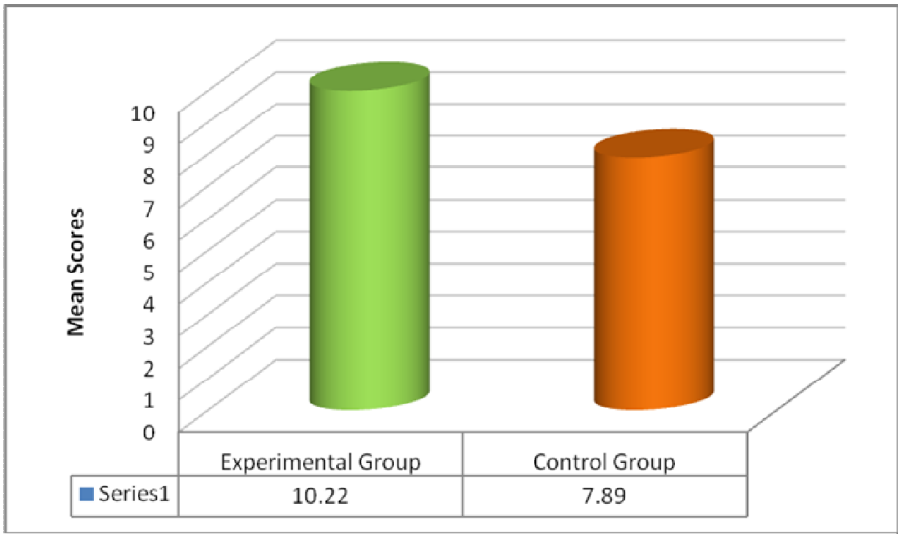


Figure 113. Comparison of the mean gain scores of Process Skills in Experimental and control group

The graphical representation of mean gain scores of Process skills in experimental and control group shows that the mean performance of secondary school students in two groups are not similar and in a mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

Comparison of Mean Gain Scores of Process Skills in Social Science Components in the Experimental and Control Group

Below given table shows eight component-wise gain score comparison within the experimental and control groups. It shows the difference in the effect of the Anchored Instruction and Existing Method of Teaching in each component of Process Skills in Social Science.

Comparison of mean gain scores of process skills in social science component (Classify) in the experimental and control group.

To compare the gain scores of Classify of secondary school students between experimental and control groups. The mean and standard deviations

of gain scores of classifying experimental and control groups were subjected to a test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 132.

Table 132

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Classify) between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Classify gain score	Experimental group	45	1.60	1.30	.16	N.S
	Control group	45	1.64	1.30		

N.S =Not Significant

From table 132 it can be seen that the obtained t-value for the mean gain score comparison of the experimental and control group is (t=.16) it is found to be not significant at .05 levels. This shows that there is no significant difference between the mean gain scores of experimental and control group. which infer that implementation of the new method is not effected much the experimental group than the control group.

It is clear from the table that the calculated t value obtained by the mean gain scores of classify in the experimental and control group for the total sample is 0.16. It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of classify of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and existing method of teaching have

almost same effect in enhancing the level of classify of secondary school students.

The mean gain scores of classifying in the experimental and control group of secondary school students are represented graphically in figure 114.

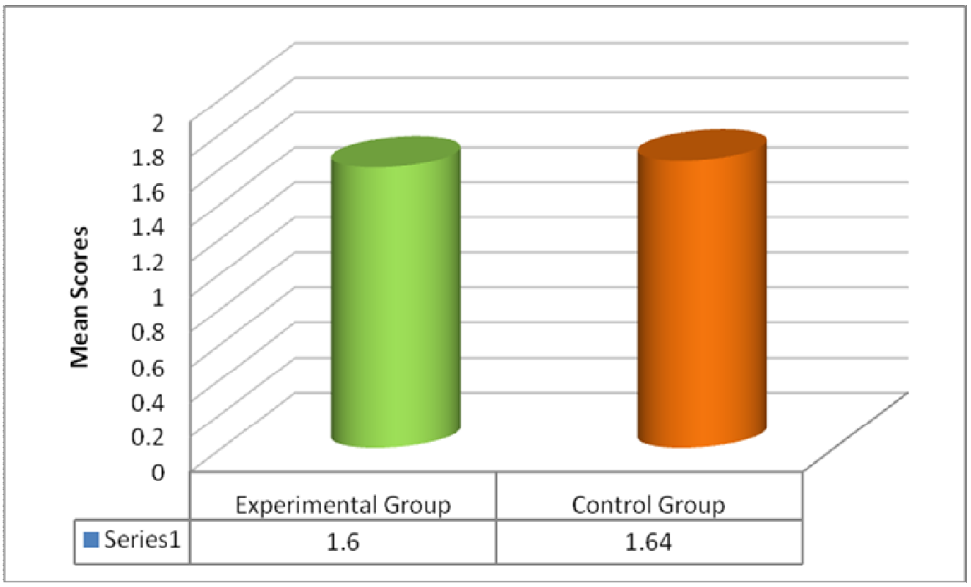


Figure 114. Comparison of the mean gain scores of Classify in Experimental and control group

The graphical representation of mean gain scores of Classify in the experimental and control group shows that the mean performance of secondary school students in two groups is similar and in mean score, the experimental group and control group are almost same. This supports the result of mean difference analysis.

Comparison of mean gain scores of process skills in social science component (Observe) in the experimental and control group.

To compare the gain scores of Observe of secondary school students between experimental and control groups. The mean and standard deviations

of gain scores of Observe experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 133.

Table 133

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Observe) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Observe gain score	Experimental group	45	1.27	0.81	0.64	N.S
	Control group	45	1.38	0.83		

N.S =Not Significant

It is clear from the table 133 that the calculated t value obtained by the mean gain scores of Observe in the experimental and control group for the total sample is (t=0.64). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Observe of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and Existing Method of Teaching are similar effect in enhancing the level of classify of secondary school students.

The mean gain scores of observing in the experimental and control group of secondary school students are represented graphically in figure 115.

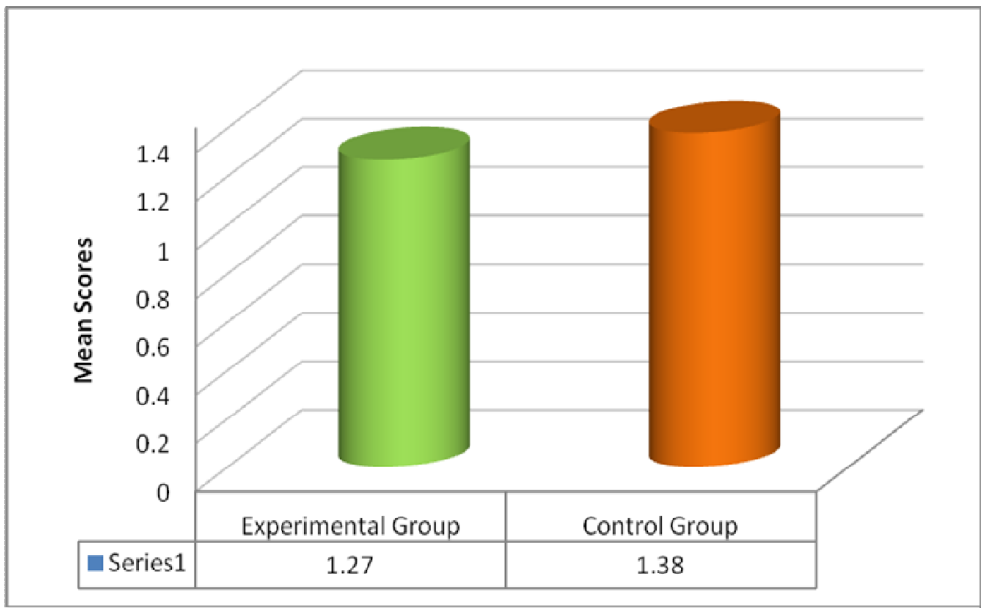


Figure 115. Comparison of the mean gain scores of Observe in experimental and control group

The graphical representation of mean gain scores of Observe in experimental and control group shows that the mean performance of secondary school students in two groups are similar and in the mean score, the experimental group and control group are almost the same. This supports the result of mean difference analysis

Comparison of mean gain scores of Process Skills in social science component (locate) in the experimental and control group.

To compare the gain scores of locating secondary school students between experimental and control groups. The mean and standard deviations of gain scores of locating experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 134.

Table 134

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Locate) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Locate gain score	Experimental group	45	0.76	1.17	1.42	N.S
	Control group	45	0.33	1.61		

N.S =Not Significant

It is clear from the table 134 that the calculated t value obtained by the mean gain scores of Locate in the experimental and control group for the total sample is (t=1.42). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of Locate of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and Existing method of Teaching are similar effect in enhancing the level of Locate of secondary school students.

The mean gain scores of Locate in the experimental and control group of secondary school students are represented graphically in figure 116.

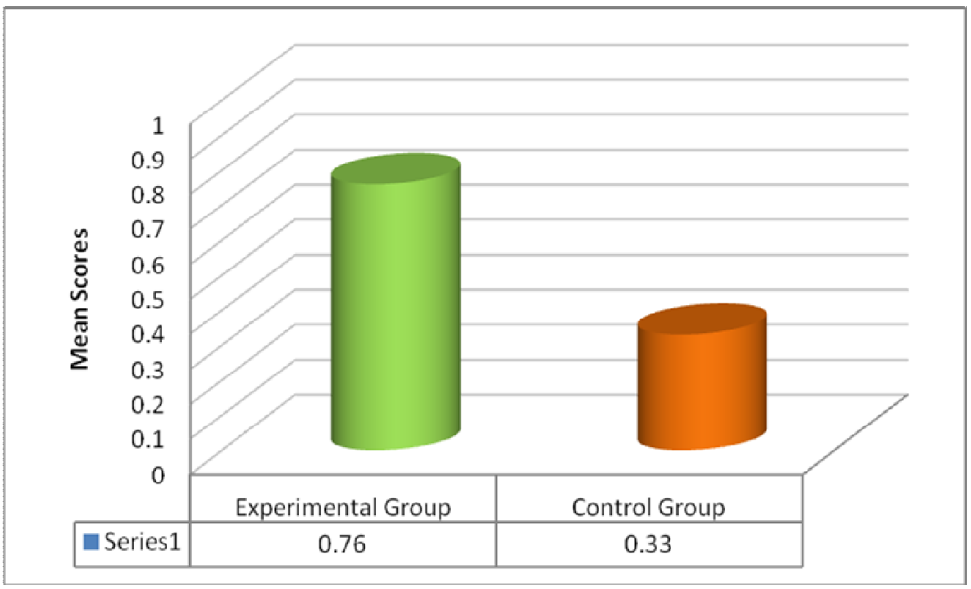


Figure 116. Comparison of the mean gain scores of Locate in experimental and control group

The graphical representation of mean gain scores of Locate in the experimental and control group shows that the mean performance of secondary school students in two groups are similar and in a mean score, the experimental group and the control group are almost same. This supports the result of mean difference analysis

Comparison of mean gain scores of process skills in social science component (Predict) in the experimental and control group.

To compare the gain scores of Predict of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of predict experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 135.

Table 135

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Predict) between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Predict gain score	Experimental group	45	1.69	0.99	1.64	N.S
	Control group	45	1.33	1.07		

N.S =Not Significant

It is clear from the table 135 that the calculated t value obtained by the mean gain scores of Predict in the experimental and control group for the total sample is(t=1.64). It is not significant at the 0.05 level. So there is no significant difference between mean posttest scores of Predict of secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and Existing method of Teaching have similar effect in enhancing the level of Predict of secondary school students.

The mean gain scores of predict in the experimental and control group of secondary school students are represented graphically in figure 117.

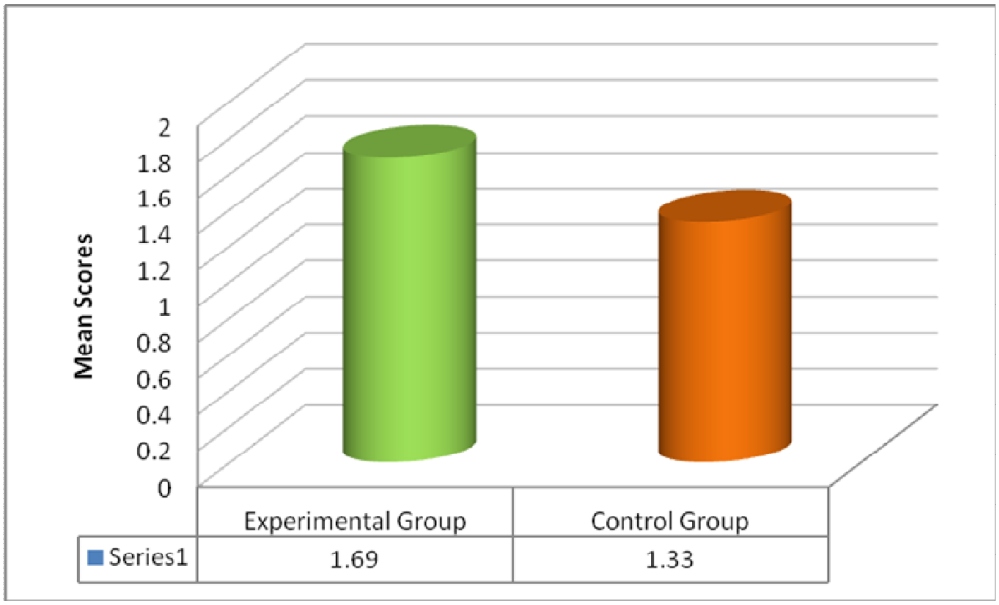


Figure 117. Comparison of the mean gain scores of Predict in Experimental and control group

The graphical representation of mean gain scores of Predict in experimental and control group shows that the mean performance of secondary school students in two groups are similar and in a mean score, the experimental group and the control group are almost the same. This supports the result of mean difference analysis

Comparison of mean gain scores of Process skills in social science component (Synthesize) in the experimental and control group.

To compare the gain scores of synthesizing secondary school students between experimental and control groups. The mean and standard deviations of gain scores of Synthesize experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 136.

Table 136

Result of Test of Significance of the Difference between Mean Gain Scores of Process Skills in Social Science Component (Synthesize) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Synthesis gain score	Experimental group	45	0.47	1.12	1.09	N.S
	Control group	45	0.22	0.99		

NS: Not Significant

It is clear from the table that the calculated t value obtained by the mean gain scores of synthesizing in the experimental and control group for the total sample is 1.09. It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of synthesizing secondary school students in experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and Existing Method of teaching have similar effect in enhancing the level of synthesizing secondary school students.

The mean gain scores of synthesize in the experimental and control group of secondary school students are represented graphically in figure 118.

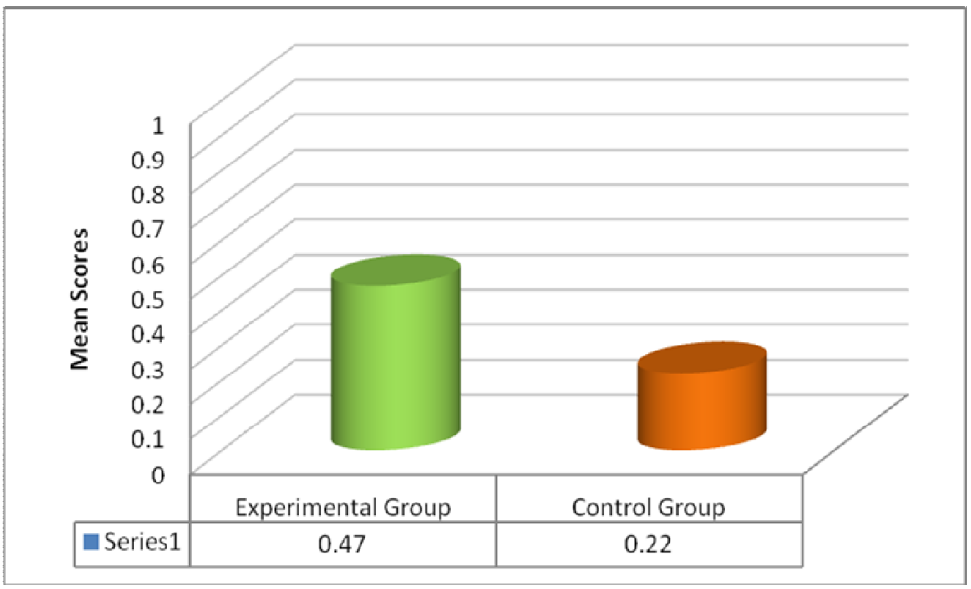


Figure 118. Comparison of the mean gain scores of Synthesize in Experimental and control group

The graphical representation of mean gain scores of synthesizing in experimental and control groups shows that the mean performance of secondary school students in two group are similar and in mean scores, the experimental group and the control group are almost the same. This supports the result of mean difference analysis

Comparison of mean gain scores of Process skills in social science component (Evaluate) in the experimental and control group.

To compare the gain scores of Evaluate of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of Evaluate experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 137.

Table 137

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Evaluate) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Evaluate gain score	Experimental group	45	1.38	1.28	1.62	N.S
	Control group	45	.89	1.57		

N.S =Not Significant

It is clear from the table 137 that the calculated t value obtained by the mean posttest scores of evaluating in the experimental and control group for the total sample is (t=1.62). It is not significant at the 0.05 level. So there is no significant difference between mean posttest scores of evaluating secondary school students in experimental and control groups. The mean scores of the experimental group is greater than the control group. Hence the Anchored Instructional Approach and Existing Method of Teaching have similar effect in enhancing the level of evaluate secondary school students.

The mean gain scores of evaluating in the experimental and control group of secondary school students are represented graphically in figure 119.

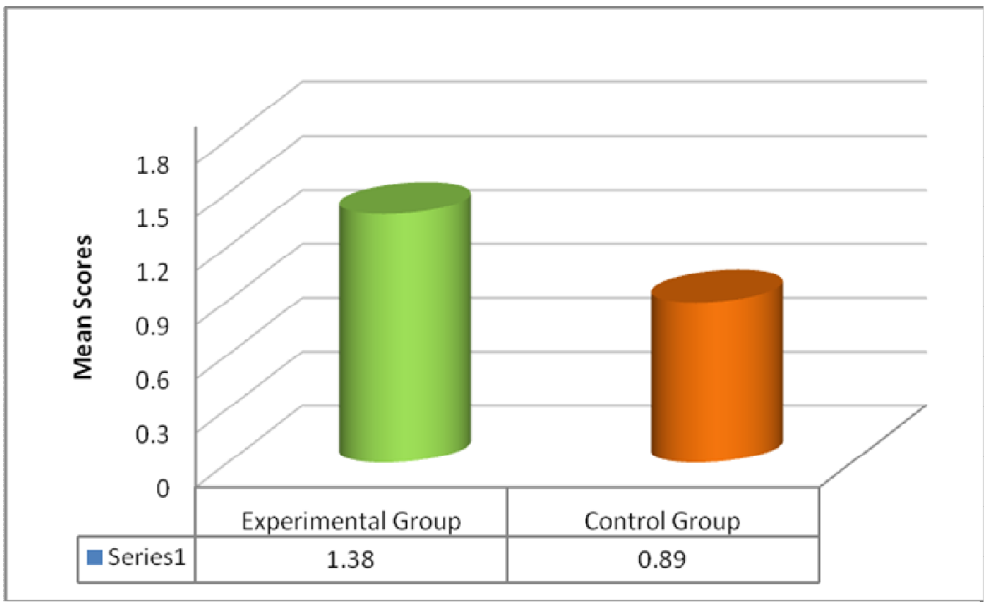


Figure 119. Comparison of the mean gain scores of Evaluate in Experimental and control group

The graphical representation of mean gain scores of evaluating in experimental and control groups shows that the mean performance of secondary school students in two groups are similar and in mean scores, the experimental group is greater than the control group. This supports the result of mean difference analysis

Comparison of mean gain scores of Process skills in social science component (Interpret) in the experimental and control group.

To compare the gain scores of the Interpret of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of interpreting experimental and control groups were subjected to the test of significance of the difference between means. The details of the t-test for the total sample are presented in the table 138.

Table 138

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Interpret) between Experimental and Control Group

Variable	Group	N	Mean	S.D	t-value	Level of Significance
Interpret gain score	Experimental group	45	1.78	1.41	1.7	N.S
	Control group	45	1.24	1.55		

N.S =Not Significant

It is clear from the table 138 that the calculated t value obtained by the mean gain scores of interpreting in the experimental and control group for the total sample is (t=1.7). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of interpreting of secondary school students between experimental and control groups. The mean scores of the experimental group and the control group are almost the same. Hence the Anchored Instructional Approach and Existing Method of Teaching have similar effect in enhancing the level of interpret of secondary school students.

The mean gain scores of Interpret in the experimental and control group of secondary school students are represented graphically in figure 120.

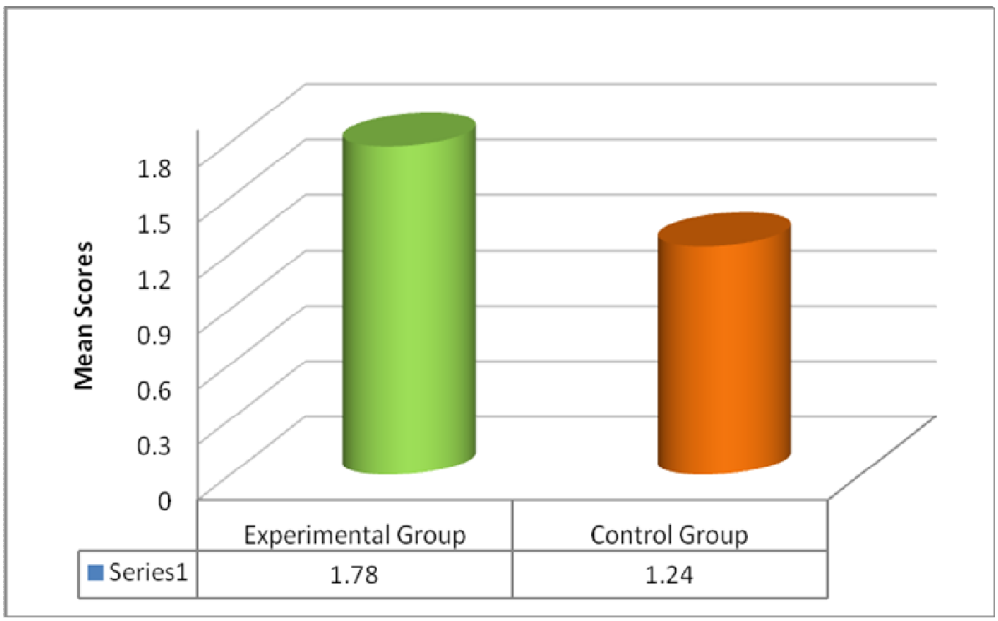


Figure 120. Comparison of the mean gain scores of Interpret in experimental and control group

The graphical representation of mean gain scores of interpret in the experimental and control group shows that the mean performance of secondary school students in two groups are similar and in mean score of the experimental group and the control group are almost same. This supports the result of mean difference analysis.

Comparison of mean gain scores of Process skills in social science component (Measure) in the experimental and control group.

To compare the gain scores of Measure of secondary school students between experimental and control groups. The mean and standard deviations of gain scores of Measure experimental and control groups were subjected to the test of significance of the difference between means. The details of t-test for the total sample are presented in the table 139.

Table 139

Result of Test of Significance of Difference between Mean Gain Scores of Process Skills in Social Science Component (Measure) between Experimental and Control Group

Variable	Group	N	Mean	S.D.	t-value	Level of Significance
Measure gain score	Experimental group	45	1.29	1.19	1.77	N.S
	Control group	45	.87	1.06		

N.S =Not Significant

It is clear from the table 139 that the calculated t value obtained by the mean gain scores of measure in the experimental and control group for the total sample is (t=1.77). It is not significant at the 0.05 level. So there is no significant difference between mean gain scores of measure of secondary school students in experimental and control groups. The mean scores of the experimental group are greater than the control group. Hence the Anchored Instructional Approach and Existing Method of Teaching have similar effect in enhancing the level of interpreting of secondary school students.

The mean gain scores of measure in the experimental and control group of secondary school students are represented graphically in figure 121.

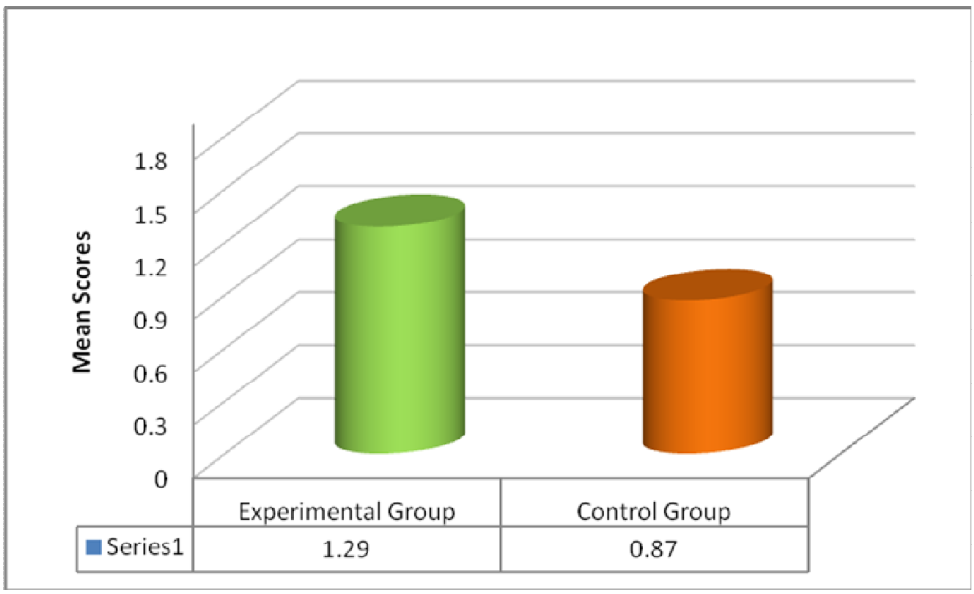


Figure 121. Comparison of the mean gain scores of Measure in Experimental and control group

The graphical representation of mean gain scores of interpreting in the experimental and control group shows that the mean performance of secondary school students in two groups are similar and in mean score, the experimental group is greater than the control group. This supports the result of mean difference analysis.

The mean difference analysis of gain scores between experimental and control groups of Process Skills in Social Science and its components of secondary school students showed the following results.

The gain scores of experimental and control groups are differ significantly in Process Skills in Social Science of secondary school students for the total sample But its components are not differ significantly.

The above analysis shows the difference in achieving components of Emotional Regulation and Process Skills in social science after teaching with

the Anchored Instruction and Existing Method of Teaching. There is a slight improvement in all components but the difference in the effect of Anchored Instruction is not statistically significant because among the total items of the tool divided into its component leads to decrease in the score.. That is why a statistically significant difference is not evident among the components. Although anchored instruction has showed more effect than the Existing Method of teaching in developing Emotional Regulation and Process Skills in social science to a greater extent.

Analysis of Covariance (ANCOVA) of the Dependent Variables

In this study, single-factor ANOVA employing four covariates was used to confirm the effect of the Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science. It is applied when one or more correlated variables existed with the dependent variable and can control the effect of any of the covariates on the dependent variables using ANCOVA.

By employing one way ANCOVA, the investigator could study the relative effectiveness of the Anchored Instructional Approach over the existing method of teaching concerning the dependent variables of the study Emotional Regulations and process skills in social science for the total sample and the subsample Boys and Girls. To study whether the experimental and control group differ significantly in mean scores of emotional regulations and process skills in Social Science after controlling the covariates pre-test scores on Emotional Regulation, process skills in Social Science score, Non-verbal

intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates for total sample and subsamples based on gender. The results and discussions are presented in the following sections.

Check for Basic Assumptions

To ensure that the collected data can be subjected to ANCOVA, it was decided to check whether the data follow the basic assumptions or not. The dependent variables of the study emotional regulations and process skill for the total sample and the subsample male and female are on the interval scale. The distributions of these scale variables follow normal distribution properties as evident from the preliminary analysis. The other two assumptions such as the linear relationship between dependent variables and the different covariates and homogeneity of variances were checked and are presented in the following sections.

The Linear Relationship between the Dependent Variables and Covariates

A Scatter plot was used to study the nature of the relationship between the dependent variable and covariates. Scatter plots of the dependent variables emotional regulations and process skill for the total sample against the covariates pre-test scores on ER, process skill score, Non-verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates were generated.

Scatter plot of five covariates and their combined effect against the dependent variables are given in figures 122 and 123 below

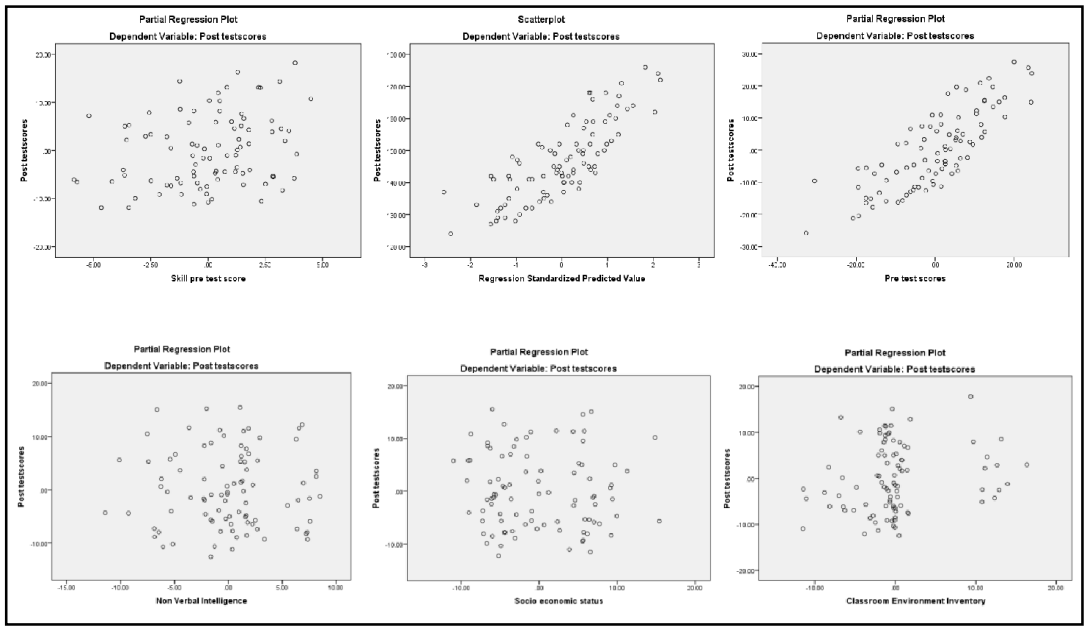


Figure 122. Scatter plot of the emotional regulation against the covariates for total sample

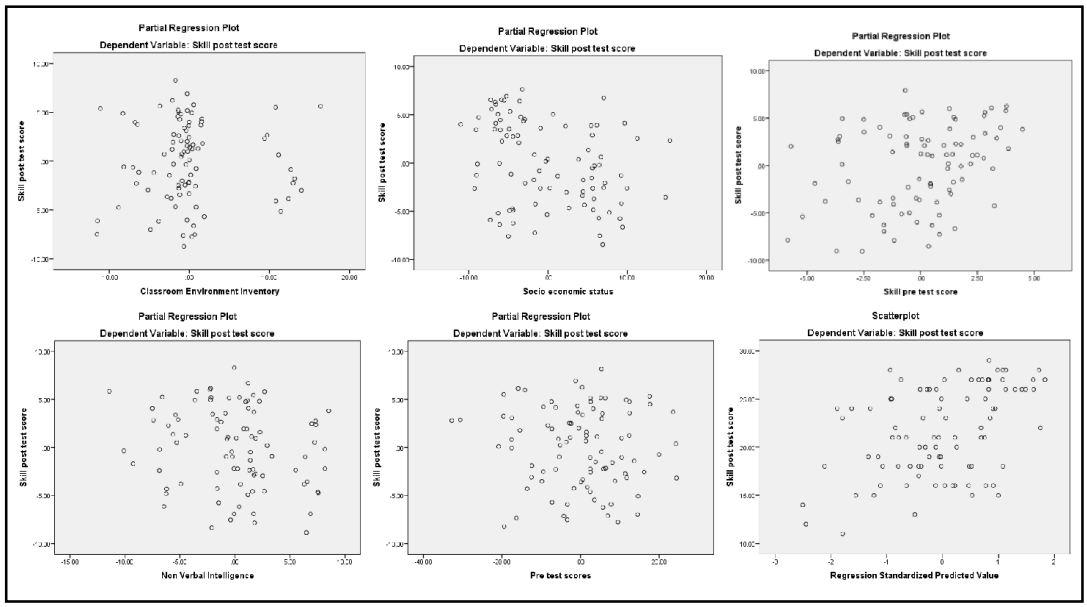


Figure 123. Scatter plot of the process skill against the covariates for total sample

The visual observation of the scatter plots given in figure above revealed that there are linear relationship between dependent variables and covariates for total sample.

Homogeneity of Variances

Levene's test is used to test if different samples have equal variances. Equal variances across samples are called homogeneity of variance. For analyzing covariance, assumptions like variances are equal across groups or samples have to follow. The Levene test can be used to verify that assumption. This tests the null hypothesis that the error variance of the dependent variable is equal across groups. Homogeneity of the variance of the experimental and control group on dependent variables emotional regulation and process skills were tested for the total sample, subsample male and female. Details of the Levene's test for all the dependent variables for the total sample are described in the preceding section and presented in the following table 140.

Table 140

Result of Levene's Test for Emotional Regulation and Process Skills in Social Science in Total Sample

Variable	Covariates	Levene's test F	df1	df2	Significant value.
ER	Pre test score	.029	1	88	.866
	Process skill score	1.247	1	88	.267
	NVIT	.778	1	88	.380
	CEI	.994	1	88	.321
	SES	.850	1	88	.359
	Total effect of Covariate	1.735	1	88	.191
Process skill	Pre test score	1.004	1	88	.319
	Process skill pre test score	.065	1	88	.799
	NVIT	1.028	1	88	.314
	CEI	1.077	1	88	.302
	SES	1.331	1	88	.252
	Total effect of Covariate	.001	1	88	.977

Since all the significant values are greater than 0.05 level of significance. Hence the variance of the experimental group and control group are equal. Hence the assumption of homogeneity of variance for ANCOVA is satisfied for the two dependent variables in the case of the total sample.

The examinations of the major assumptions revealed that the basic assumptions of ANCOVA are met to a satisfactory extent for the total sample. Hence the data can be subjected to ANCOVA.

Comparison of the adjusted mean scores of the Emotional Regulation of experimental and Control group by considering pre-process skills in social science, nonverbal intelligence, Classroom Environment, and Socio-Economic Status as covariates for total sample and sub-samples based on gender.

To study whether is there any significant difference exist between experimental and control groups in terms of Emotional Regulation after adjusting for the pre-intervention differences if any, one –way ANCOVA was used. Every ANCOVA with significant F value was followed by Bonferroni's test of post hoc comparison. The details of covariance analysis of the dependent variable, Emotional Regulation for the total sample, subsample boys and sub-sample girls are presented in the following sections

Comparison of the adjusted mean scores of Emotional Regulation of experimental and control group by considering pre Process Skills in Social Science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status as covariates for a total sample

To study the relative effectiveness of the Anchored Instructional approach and existing method teaching in enhancing the Emotional

Regulation of Secondary School Students after adjusting for pre-test differences for ANCOVA were employed on the total sample. Linear adjustments were made in the post-test scores of Emotional Regulation for the individual as well as a combined effect of the covariates namely pre-process skills in Social Science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status, the four ANCOVA was described in a single table. The data and result of covariance analysis of Emotional Regulation for the total sample are presented in below table 141.

Table 141

Summary of Analysis of Covariance of Emotional Regulation-Total Sample

Source of variation		Covariates					
		Pre test score	Skill	NVIT	CEI	SES	Total effect of Covariate
Sum of squares	Between groups	443.79	1361.45	1456.81	1444.03	1470.16	373.28
	With in groups	4640.79	11422.19	11701.24	11710.43	11706.49	4185.79
Df	Between groups	1	1	1	1	1	1
	With in groups	87	87	87	87	87	83
Mean sum of squares	Between groups	443.79	1361.45	1456.81	1444.03	1470.16	373.28
	With in groups	53.34	131.29	134.49	134.60	134.56	50.43
F		8.32	10.37	10.83	10.73	10.93	7.40
Sig.		.005	.002	.001	.002	.001	0.008
Total		1957105	1957105	1957105	1957105	1957105	1957105

ANCOVA table gives the F values corresponding to comparison of Control group and Experimental group as F (1, 87) = 8.320, significant value = 0.005, F (1, 87) = 10.370, significant value = 0.002, F (1, 87) = 10.832, significant value = 0.001, F (1, 87) = 10.728, significant value=0.002, F (1, 87) = 10.926, significant value = 0.001, and F(1, 83)= 7.402, significant value = 0.008 when considering the adjustments made on controlling the covariates pre-test scores on Emotional Regulation, process skills in Social Science score, Non verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates are found to be significant since all the significant values are less than 0.01 level of significance. Hence it can be said that even after controlling the effect of these covariates the difference in Emotional Regulation scores between the control group and experimental group is significant. Hence the difference in Emotional Regulation scores among control and experimental groups is not attributed to chance due to any of the controlling variables but it can be said that it is because of the Anchored Instructional Approach given to the experimental group. So the new instructional strategy is more effective in teaching Emotional Regulations. To check the adjustment mean difference multiple comparison tests are conducted.

Post hoc comparison of adjusted means on Emotional Regulation of Experimental and Control group for Total Sample

To find out whether experimental and control groups differ significantly in terms of adjusted means post-test scores of Emotional Regulation, the test of significance of the difference between adjusted mean was used with each ANCOVA. The details of post hoc comparison of adjusted mean scores of Emotional Regulation of total scores are presented table 142.

Table 142

Data and Result of Bonferroni's Test of Post Hoc Comparison between the Adjusted Means of Emotional Regulation – Total Sample

Groups Compared	Covariate	N		Adjusted means		Mean difference	Std. Error	Sig p-value	Significance of t
		N_1	N_2	M_1	M_2				
Control and Experimental Groups	Pre test score	45	45	144.70	149.23	4.527	1.569	.005	<0.01
	Skill test score	45	45	143.07	150.86	7.794	2.420	.002	<0.01
	NVIT	45	45	142.94	150.99	8.049	2.446	.001	<0.01
	CEI	45	45	142.96	150.97	8.012	2.446	.002	<0.01
	SES	45	45	142.89	151.05	8.159	2.468	.001	<0.01
	Total effect of Covariate	45	45	144.86	149.07	4.208	1.547	.008	<0.01

The post-hoc test table gives the results that all the significant values corresponding to adjusted mean scores of ER scores among control and experimental group when controlling covariates individually and taken together are less than 0.01 level of significance. So it can be said that the difference in adjusted mean scores is significant. When comparing adjusted means it is seen that adjusted mean scores are maximum in the experimental group so it can infer that new instructional strategy is more effective in improving the Emotional Regulation score than the existing teaching method.

Comparison of adjusted mean scores of Process Skills in Social Science of the experimental and control group by considering pre emotional regulation, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status.

To study the relative effectiveness of Anchored Instructional Approach and Existing method of teaching in enhancing process skills in social science of primary school students, after making Levene's adjustments in post-test scores for an individual as well as a combined effect of pre emotional regulation, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status four separate one way ANOVA was employed on the total sample. The details are presented in a single table. Data and result of covariance analysis on process skills in social science for the total sample are given in the table 143.

Table 143

Summary of Analysis of Covariance of Process Skills in Social Science in Total Sample

Source of variation		Covariates					
		Pre test score	Skill	NVIT	CEI	SES	Total effect of Covariate
Sum of Squares	Between groups	174.33	135.79	158.856	155.035	118.998	117.789
	With in groups	1695.15	1570.01	1672.492	1720.479	1614.079	1374.353
Df	Between groups	1	1	1	1	1	1
	With in groups	87	87	87	87	87	83
Mean Sum of Squares	Between groups	174.33	135.791	158.856	155.035	118.998	117.789
	With in groups	19.49	18.046	19.224	19.776	18.553	16.558
	F	8.95	7.525	8.263	7.840	6.414	7.114
	Sig.	.004	.007	.005	.006	.013	0.009
	Total	44040	44040	44040	44040	44040	44040

For checking the effectiveness of Anchored Instructional Approach to compare the mean scores of process skill, performed ANCOVA test and the table gives the F values corresponding to a comparison of Control group and Experimental group as F(1,87)=8.947, significant value=0.004, F (1,87)=7.525, significant value=0.007, F(1,87)=8.263, significant value=0.005, F(1,87)=7.840, significant value = 0.006, F (1, 87) = 6.414, significant value = 0.013, and F (1, 83)= 7.114, significant value= 0.009 when considering the adjustments made on controlling the covariates scores on process skill, pre-test process skill score, Non-verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates respectively were found to be significant since all the significant values are less than 0.01 level of significance except for one at 0.05 level of significance. Hence it can be said that even after controlling the effect of these covariates the difference in process skill scores between the control group and experimental group is significant. Hence the difference in process skill scores among control and experimental groups is not attributed to chance due to any of the controlling variables but it can be said that it is because of the Anchored Instructional Approach given to the experimental group. So the new instructional strategy is more effective in teaching Process Skills in Social Science. To check the adjustment mean difference a post- hoc test is conducted.

Post hoc Comparison of Adjusted Means on Process Skills in Social Science of Experimental and Control Group for a Total Sample

To find out whether experimental and control groups differ significantly in terms of adjusted means post-test scores of Process Skills in Social Science, the test of significance of the difference between adjusted mean was used with each ANCOVA. The details, of post hoc comparison of adjusted mean scores of Process Skills in Social Science of total scores, are presented in the table 144.

Table 144

Data and Result of Bonferroni's Test of Post Hoc Comparison between the Adjusted Means of Process Skills – Total Sample

Groups Compared	Co-variate	N		Adjusted means		Mean Difference	Std. error	Sig p-value	Significance of t
		N_1	N_2	M_1	M_2				
Control and Experimental Groups	Pre test score	45	45	20.23	23.06	2.837	.948	.004	<0.01
	Skill test score	45	45	20.41	22.88	2.461	.897	.007	<0.01
	NVIT	45	45	20.32	22.97	2.658	.925	.005	<0.01
	CEI	45	45	20.33	22.96	2.625	.938	.006	<0.01
	SES	45	45	20.48	22.81	2.321	.917	.013	<0.05
	Total effect of Covariate	45	45	20.46	22.83	2.364	.886	.009	<0.01

The multiple comparison tables 144 shows the results that all the significant values corresponding to adjusted mean scores of process skill scores among control and experimental group when controlling covariates individually and taken together are less than 0.01 level of significance except corresponding to scores on SES which is significant at 0.05 level. So it can be said that the difference in adjusted mean scores is significant. When comparing adjusted means it is seen that adjusted mean scores are maximum in the experimental group so it can infer that new instructional strategy is more effective in improving process skill scores than the existing teaching method.

Comparison among Sub-sample Male and Female

The linear relationship between the dependent variables and covariates.

A Scatter plot was used to study the nature of the relationship between the dependent variable and covariates. Scatter plots of the

dependent variables emotional regulations and process skill for the sub-sample male and female against the covariates pre-test scores on ER, process skill score, Nonverbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates were generated.

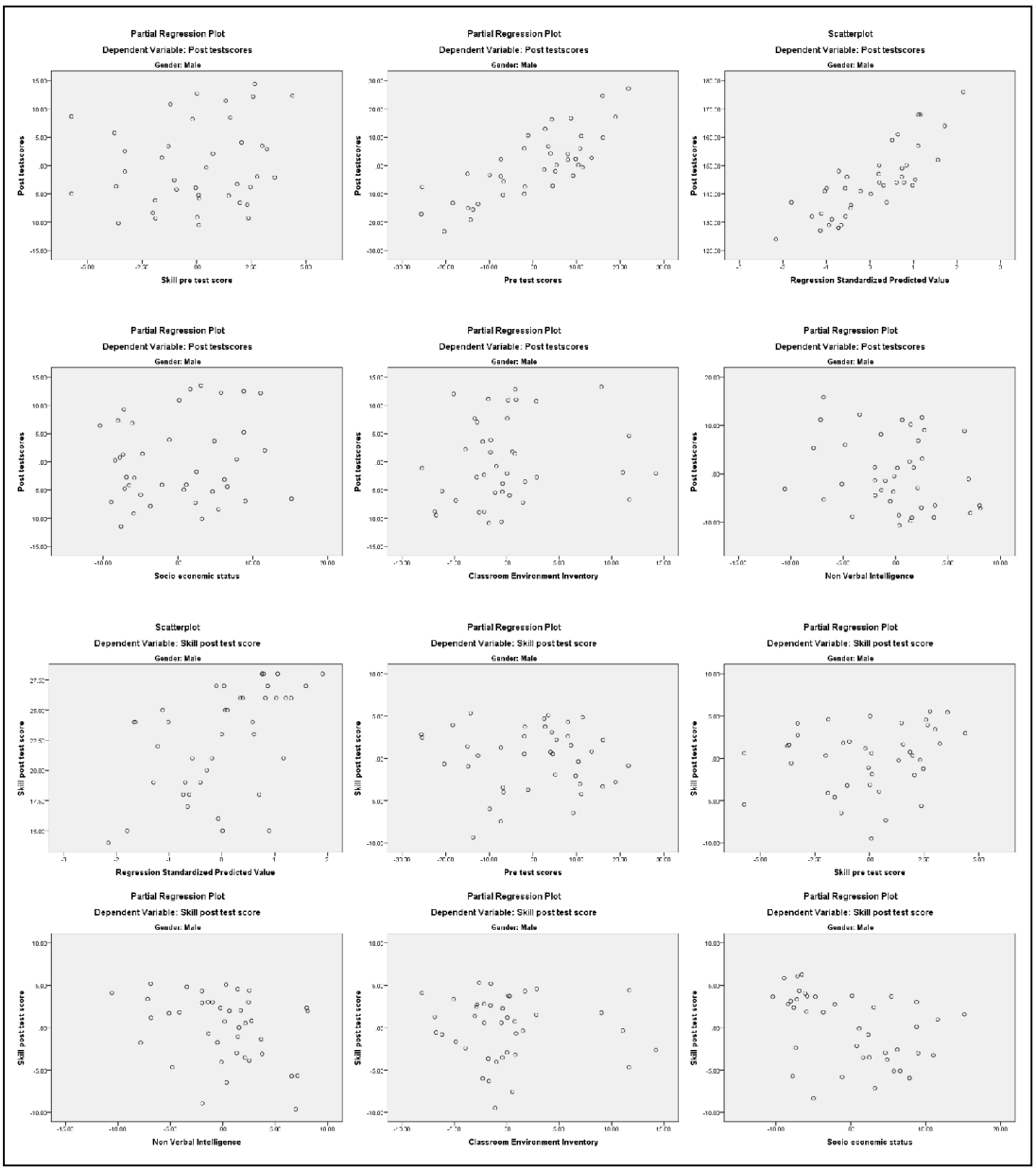


Figure 124. Scatter plot of the dependent variables emotional regulations and process skill against the covariates for sub sample male

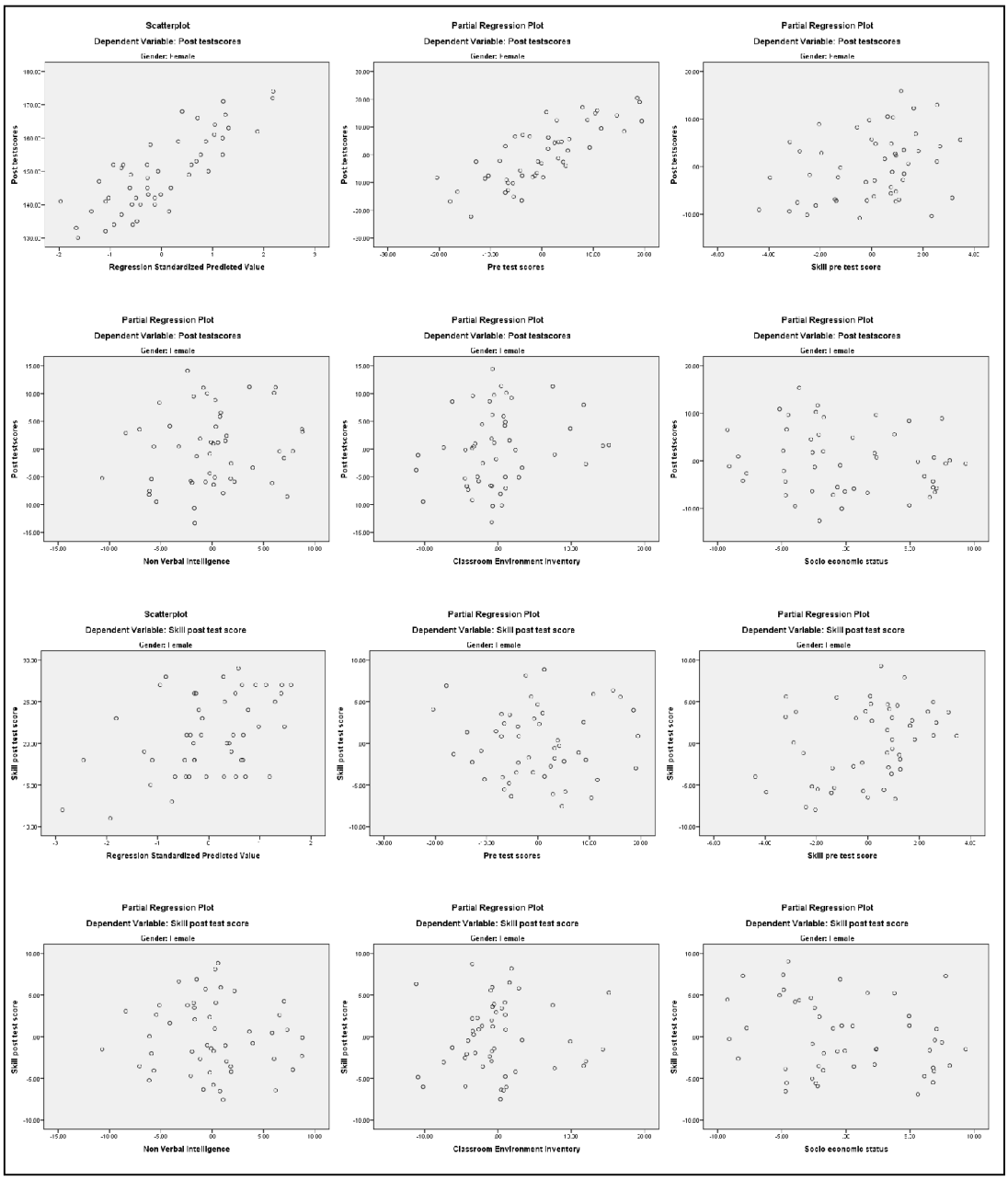


Figure 125. Scatter plot of the dependent variables emotional regulations and process skill against the covariates for sub sample female

Homogeneity of Variances

Homogeneity of the variance of the experimental and control group on dependent variables emotional regulation and process skills were tested for subsamples male and female. Details of the Levene's test for all the dependent

variables are described in the preceding section and presented in the following table 145

Table 145

Summary of Analysis of Covariance of Emotional Regulation and Process Skills in Social Science in Sub sample Boys

Variable	Covariates	Levene's test F	df_1	df_2	Significant value.
ER	Pre test score	.878	1	38	.355
	Process skill score	.078	1	38	.782
	NVIT	.035	1	38	.853
	CEI	.009	1	38	.925
	SES	.337	1	38	.565
	Total effect of Covariate	1.228	1	38	.275
Process skill	Pre test score	.101	1	38	.752
	Process skill pre test score	.302	1	38	.586
	NVIT	2.368	1	38	.132
	CEI	.033	1	38	.858
	SES	.075	1	38	.786
	Total effect of Covariate	.275	1	38	.603

Table 146

Summary of Analysis of Covariance of Emotional Regulation and Process Skills in Social Science in Sub sample Girls

Variable	Covariates	Levene 's test F	df_1	df_2	Sig. value
Emotional Regulation	Pre test score	.133	1	48	.717
	Process skill score	2.104	1	48	.153
	NVIT	1.484	1	48	.229
	CEI	1.774	1	48	.189
	SES	1.487	1	48	.229
	Total effect of Covariate	.189	1	48	.666
Process skill	Pre test score	1.059	1	48	.309
	Process skill pre test score	.155	1	48	.696
	NVIT	1.350	1	48	.251
	CEI	.933	1	48	.339
	SES	.511	1	48	.478
	Total effect of Covariate	.149	1	48	.701

Since all the significant values are greater than 0.05 level of significance, it can be said that the null hypothesis can be accepted. Hence the variance of experimental group and control group for subsamples are equal. Hence the assumption of homogeneity of variance for ANCOVA is satisfied for the two dependent variables in the case of sub-sample.

The examinations of the major assumptions revealed that the basic assumptions of ANCOVA are met to a satisfactory extent for the subsample. Hence the data can be subjected to ANCOVA. The details of covariance against the dependent variable for the subsample are given.

The comparison of adjusted mean scores of Emotional Regulation of experimental and control group by considering pre-process skills in social science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status.

To study the relative effectiveness of Anchored Instructional Approach and Existing method of teaching in enhancing emotional regulation of primary school students, after making Levene's adjustments in post-test scores for an individual as well as a combined effect of pre-process skills in social science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status four separate one way ANOVA were employed on sub-sample Boys. The details are presented in a single table. Data and result of covariance analysis on process skills in social science for sub-sample Boy.

Table 147

Summary of Analysis of Covariance of Emotional Regulation Boys

Source of Variation		Covariates					
		Pre test score	Skill	NVIT	CEI	SES	Total effect of Covariate
Sum of squares	Between groups	128.85	755.32	663.45	739.97	805.98	123.48
	With in groups	1	1	1	1	1	1
Df	Between groups	128.85	755.32	663.45	739.97	805.98	123.48
	With in groups	2230.73	5117.15	4923.35	5225.93	4912.62	1912.58
Mean sum of squares	Between groups	37	37	37	37	37	33
	With in groups	60.29	138.30	133.06	141.24	132.77	57.96
F		2.14	5.46	4.99	5.24	6.07	2.13
Sig.		.152	.025	.032	.028	.019	.154
Total		831954	831954	831954	831954	831954	831954

ANCOVA table 147 gives the F values corresponding to comparison of Control group and Experimental group in male group as F (1, 37) = 2.137, significant value = .152, F (1, 37) = 5.461, significant value = 0.025, F (1, 37) = 4.986, significant value = 0.032, F (1, 37) = 5.239, significant value = 0.028, F (1, 37) = 6.070, significant value = 0.019, and F (1, 33) = 2.131, significant value = 0.154 when considering the adjustments made on controlling the covariates pre-test scores on ER, process skill score, Non verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates are found to be such that some differences are significant since those significant values are less than 0.05 level of significance and some are not significant as their p-value is greater than 0.05 level of significance. Hence it can be said that even after controlling the effect of these covariates the difference in ER scores between the control group and experimental group is significant except for the case of pre-test score and combined effect. Hence the difference in ER scores among control and experimental groups among male are not attributed to chance due to any of the controlling variables but can be said that it is because of the Anchored Instructional Approach given to the experimental group for some extent. So the new instructional strategy is more effective in teaching Emotional Regulation. To check the adjusted mean difference multiple comparison tests are conducted and the result is given below.

Post hoc comparison of adjusted means on Emotional Regulation of Experimental and Control group for sub-sample boys

To find out whether experimental and control groups differ significantly in terms of adjusted means post-test scores of Emotional

Regulation, the test of significance of the difference between adjusted mean was used with each ANCOVA. The details of the post hoc comparison of adjusted mean scores of the Emotional Regulation of sub-sample boys are to be studied.

Table 148

Data and Result of Bonferroni's Test of Post hoc Comparison between the Adjusted Means of Emotional Regulation – Subsample Boys

Groups compared	Covariate	N		Adjusted means		Mean difference	Std. Error	Sig p-value	Significance of t
		N_1	N_2	M_1	M_2				
Control and Experimental Groups	Pre test score	20	20	141.84	145.56	3.73	2.55	.152	>0.05
	Skill test score	20	20	139.35	148.05	8.69*	3.72	.025	<0.05
	NVIT	20	20	139.62	147.79	8.17*	3.66	.032	<0.05
	CEI	20	20	139.39	148.01	8.62*	3.77	.028	<0.05
	SES	20	20	139.20	148.20	9.001*	3.65	.019	<0.05
	Total effect of Covariate	20	20	141.85	145.55	3.69	2.53	.154	>0.05

The post hoc test table 148 gives the results that all the significant values corresponding to adjusted mean scores of ER scores in control and experimental group among the male group when controlling covariates individually and taken together are less than 0.05 level of significance except two. So it can be said that the difference in adjusted mean scores is significant. When comparing adjusted means it is seen that adjusted mean scores are maximum in the experimental group so it can infer that new instructional strategy is more effective in improving Emotional Regulation scores than the existing teaching method.

Comparison of adjusted mean scores of Process Skills in Social Science of the experimental and control group by considering pre-Emotional Regulation, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status.

To study the relative effectiveness of Anchored Instructional Approach and Existing method of teaching in enhancing Process Skills in Social Science of primary school students, after making Levene's adjustments in post-test scores for an individual as well as a combined effect of pre-Emotional Regulation, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status four separate one way ANOVA was employed on sub-sample Boys. The details are presented in a single table. Data and result of covariance analysis on process skills in social science for sub-sample Boy.

Table 149

Summary of Analysis of Covariance of Process Skills in Social Science Boys

Source of variation		Covariates					
		Pre test score	ER	NVIT	CEI	SES	Total effect of Covariate
Sum of squares	Between groups	28.61	32.82	21.41	28.51	20.712	20.227
	With in groups	1	1	1	1	1	1
Df	Between groups	28.61	32.82	21.41	28.51	20.712	20.227
	With in groups	678.79	693.96	646.12	696.06	616.706	514.890
Mean sum of squares	Between groups	37	37	37	37	37	33
	With in groups	18.35	18.76	17.46	18.81	16.668	15.603
	F	1.56	1.75	1.23	1.52	1.243	1.296
	Sig.	.220	.194	.275	.226	.272	.263
	Total	21023	21023	21023	21023	21023	21023

For checking the effectiveness of Anchored Instructional Approach, to compare the mean scores of process skill among male, performed ANCOVA test and the table gives the F values corresponding to a comparison of Control group and Experimental group as F(1, 37)=1.560, significant value=0.220, F(1, 37)=1.750, significant value = 0.194, F (1, 37) = 1.226, significant value = 0.275, F (1, 37) = 1.515, significant value = 0.225, F (1, 37) = 1.243, significant value = 0.272, and F (1, 33) = 1.296, significant value = 0.263 when considering the adjustments made on controlling the covariates scores on process skill, pre-test process skill score, Non-verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates respectively were found to be not significant since all the significant values are greater than 0.05 level of significance. Hence it can be said that after controlling the effect of these covariates the difference in process skill scores between the control group and the experimental group among males is not significant. Hence the difference in process skill scores among control and experimental groups is attributed to chance due to any of the controlling variables but it can be said that it is because of the Anchored Instructional Approach given to the experimental group. So the new instructional strategy is not much effective in teaching process skills among Boys.

The comparison of adjusted mean scores of Emotional Regulation of experimental and control group by considering pre-process skills in social science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status.

To study the relative effectiveness of Anchored Instructional Approach and Existing method of teaching in enhancing emotional regulation of primary school students, after making Levene's adjustments in post-test scores for an individual as well as a combined effect of pre-process skills in social science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status four separate one way ANOVA were employed on sub-sample girls. The details are presented in a single table. Data and result of covariance analysis on process skills in social science for sub-sample girls are given.

Table 150

Summary of Analysis of Covariance of Emotional Regulation –Sub sample Girls

Source of variation		Covariates					
		Pre test score	Skill	NVIT	CEI	SES	Total effect of Covariate
Sum of squares	Between groups	326.94	516.78	679.46	720.59	629.072	197.826
	With in groups	1	1	1	1	1	1
df	Between groups	326.94	516.78	679.46	720.59	629.072	197.826
	With in groups	2313.63	5203.48	5701.91	5699.93	5699.95	1952.65
Mean sum of squares	Between groups	47	47	47	47	47	43
	With in groups	49.23	110.71	121.32	121.28	121.275	45.410
	F	6.64	4.67	5.60	5.94	5.187	4.356
	Sig.	.013	.036	.022	.019	.027	.043
	Total	1125151	1125151	1125151	1125151	1125151	1125151

ANCOVA table 150 gives the F values corresponding to comparison of Control group and Experimental group among female as F (1, 47) = 6.642, significant value = 0.013, F (1, 47) = 4.668, significant value = 0.036, F (1, 47) = 5.601, significant value = 0.022, F (1, 47) = 5.942, significant value = 0.019, F (1, 47) = 5.187, significant value = 0.027, and F (1, 43) = 4.356, significant value = 0.043 when considering the adjustments made on controlling the covariates pre-test scores on ER, process skill score, Non verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates are found to be significant since all the significant values are less than 0.05 level of significance. Hence it can be said that even after controlling the effect of these covariates the difference in ER scores between the control group and experimental group among females is significant. Hence the difference in ER scores among control and experimental groups is not attributed to chance due to any of the controlling variables but it can be said that it is because of the Anchored Instructional Approach given to the experimental group. So the new instructional strategy is more effective in teaching Emotional Regulation. To check the adjustment mean difference multiple comparison tests are conducted and the result is given below.

Post hoc comparison of adjusted means on Emotional Regulation of Experimental and Control group for sub-sample girls

To find out whether experimental and control groups differ significantly in terms of adjusted means post-test scores of Emotional Regulation, the test of significance of the difference between adjusted mean was used with each ANCOVA. The details, of post hoc comparison of adjusted mean scores of Emotional Regulation of sub-sample Girls.

Table 151

Data and Result of Bonferroni's Test of Post hoc Comparison between the Adjusted Means of Emotional Regulation – Sub sample Girls

Groups Compared	Covariate	N		Adjusted means		Mean difference	Std. error	Sig. p-value	Significance of t
		N_1	N_2	M_1	M_2				
Control and Experimental Groups	Pre test score	25	25	146.99	152.16	5.167*	2.005	.013	<0.05
	Skill test score	25	25	146.32	152.84	6.513*	3.015	.036	<0.05
	NVIT	25	25	145.87	153.29	7.412*	3.132	.022	<0.05
	CEI	25	25	145.78	153.38	7.595*	3.116	.019	<0.05
	SES	25	25	145.96	153.20	7.248*	3.182	.027	<0.05
	Total effect of Covariate	25	25	147.51	151.65	4.143*	1.985	.043	<0.05

The post hoc test table 151 gives the results that all the significant values corresponding to adjusted mean scores of ER scores in control and experimental group among females when controlling covariates individually and taken together are less than 0.05 level of significance. So it can be said that the difference in adjusted mean scores is significant. When comparing adjusted means it is seen that adjusted mean scores are maximum in the experimental group so it can infer that new instructional strategy is more effective in improving ER scores than the existing teaching method.

Comparison of adjusted mean scores of Process Skills in Social Science of the experimental and control group by considering pre Emotional Regulation in social science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status

To study the relative effectiveness of Anchored Instructional Approach and Existing method of teaching in enhancing Process Skills in Social Science

of primary school students, after making Levene's adjustments in post-test scores for an individual as well as a combined effect of pre-Emotional Regulation, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status four separate one way ANOVA was employed on sub-sample girls. The details are presented in a single table. Data and result of covariance analysis on Emotional Regulation for sub-sample girls are given.

Table 152

Summary and Analysis of Covariance of Process Skills in Social Science in Subsample Girls

Source of variation		Covariates					
		Pre test score	Skill	NVIT	CEI	SES	Total effect of Covariate
Sum of squares	Between groups	326.94	516.78	679.46	720.59	629.072	197.826
	With in groups	1	1	1	1	1	1
df	Between groups	326.94	516.78	679.46	720.59	629.072	197.826
	With in groups	2313.63	5203.48	5701.91	5699.93	5699.95	1952.65
Mean sum of squares	Between groups	47	47	47	47	47	43
	With in groups	49.23	110.71	121.32	121.28	121.275	45.410
	F	6.64	4.67	5.60	5.94	5.187	4.356
	Sig.	.013	.036	.022	.019	.027	.043
	Total	1125151	1125151	1125151	1125151	1125151	1125151

ANCOVA table 152 gives the F values corresponding to comparison of Control group and Experimental group among female as F (1, 47) = 6.642, significant value = 0.013, F (1, 47) = 4.668, significant value = 0.036, F (1, 47) = 5.601, significant value = 0.022, F (1, 47) = 5.942, significant value = 0.019, F (1, 47) = 5.187, significant value = 0.027, and F (1, 43) = 4.356, significant value = 0.043 when considering the adjustments made on controlling the covariates pre-test scores on ER, process skill score, Non verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates are found to be significant since all the significant values are less than 0.05 level of significance. Hence it can be said that even after controlling the effect of these covariates the difference in ER scores between the control group and the experimental group among females is significant. Hence the difference in ER scores among control and experimental groups is not attributed to chance due to any of the controlling variables but it can be said that it is because of the Anchored Instructional Approach given to the experimental group. So the new instructional strategy is more effective in teaching Emotional Regulation. To check the adjusted mean difference, a multiple comparison test is conducted and the result is given below.

Post hoc comparison of adjusted means on Emotional Regulation of Experimental and Control group for sub-sample girls

To find out whether experimental and control groups differ significantly in terms of adjusted means post-test scores of Emotional Regulation, the test of significance of the difference between adjusted mean

was used with each ANCOVA. The details, of post hoc comparison of adjusted mean scores of Emotional Regulation of sub-sample Girls.

Table 153

Data and Result of Bonferroni's Test of Post hoc Comparison between the Adjusted Means of Emotional Regulation – Sub sample Girls

Groups compared	Covariate	N		Adjusted means		Mean difference	Std. error	Sig p-value	Significance of t
		N_1	N_2	M_1	M_2				
Control and Experimental Groups	Pre test score	25	25	146.99	152.16	5.167*	2.005	.013	<0.05
	Skill test score	25	25	146.32	152.84	6.513*	3.015	.036	<0.05
	NVIT	25	25	145.87	153.29	7.412*	3.132	.022	<0.05
	CEI	25	25	145.78	153.38	7.595*	3.116	.019	<0.05
	SES	25	25	145.96	153.20	7.248*	3.182	.027	<0.05
	Total effect of Covariate	25	25	147.51	151.65	4.143*	1.985	.043	<0.05

The post-hoc test table gives the results that all the significant values corresponding to adjusted mean scores of ER scores in control and experimental group among females when controlling covariates individually and taken together are less than 0.05 level of significance. So it can be said that the difference in adjusted mean scores is significant. When comparing adjusted means it is seen that adjusted mean scores are maximum in the experimental group so it can infer that new instructional strategy is more effective in improving ER scores than the existing teaching method.

Comparison of adjusted mean scores of Process Skills in Social Science of the Experimental and Control Group by Considering Pre Emotional Regulation in Social Science, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status

To study the relative effectiveness of Anchored Instructional Approach and Existing method of teaching in enhancing Process Skills in Social Science of primary school students, after making Levene's adjustments in post-test scores for an individual as well as a combined effect of pre Emotional Regulation, Non-Verbal Intelligence, Classroom Environment, Socio-Economic Status four separate one way ANOVA was employed on sub-sample girls. The details are presented in a single table. Data and result of covariance analysis on Emotional Regulation for sub-sample girls are given below.

Table 154

Summary and Analysis of Covariance of Process Skills in Social Science in Sub sample Girls

Source of variation		Covariates					
		Pre test score	Skill	NVIT	CEI	SES	Total effect of Covariate
Sum of squares	Between groups	100.98	143.14	149.45	144.78	105.60	84.66
	With in groups	1	1	1	1	1	1
Df	Between groups	100.98	143.14	149.45	144.78	105.60	84.66
	With in groups	818.49	948.09	941.51	947.92	895.44	779.24
Mean sum of squares	Between groups	47	47	47	47	47	43
	With in groups	17.42	20.17	20.03	20.169	19.05	18.12
	F	5.79	7.09	7.46	7.18	5.54	4.67
	Sig.	.020	.011	.009	.010	.023	.036
	Total	23017	23017	23017	23017	23017	23017

For checking the effectiveness of Anchored Instructional Approach to compare the mean scores of process skill, performed ANCOVA test and the table gives the F values corresponding to comparison of Control group and Experimental group among female as F(1,47)=5.798, significant value =0.020, F(1,47)=7.096, significant value=0.011, F(1,47)=7.460, significant value=0.009, F(1,47)=7.178, significant value = 0.010, F (1, 47) = 5.543, significant value = 0.023, and F (1, 43) = 4.672, significant value = 0.036 when considering the adjustments made on controlling the covariates scores on process skill, pre-test process skill score, Non verbal intelligence test score, Classroom environment inventory, Socio-Economic status score and combined effects of all these covariates respectively were found to be significant since all the significant values are less than 0.05 level of significance. Hence it can be said that even after controlling the effect of these covariates the difference in process skill scores between the control group and experimental group is significant among females. Hence the difference in process skill scores among control and experimental groups is not attributed to chance due to any of the controlling variables but it can be said that it is because of the Anchored Instructional Approach given to the experimental group. So the new instructional strategy is more effective in teaching process skills in Social Science. To check the adjusted mean difference a post- hoc test is conducted and the result is given below.

Post hoc comparison of adjusted means on Process Skills in Social Science of Experimental and Control group for sub-sample girls

To find out whether experimental and control groups differ significantly in terms of adjusted means post-test scores of Process Skills in Social Science test of significance of the difference between adjusted mean

were used with each ANCOVA. The details of post hoc comparison of adjusted mean scores of Process Skills in Social Science of sub-sample Girls.

Table 155

Data and result of Bonferroni's test of post hoc comparison between the adjusted means of Process Skills in Social Science – Sub sample Girls

Groups compared	Co-variate	N		Adjusted means		Mean difference	Std. error	Sig p-value	Significance of t
		N_1	N_2	M_1	M_2				
Control and Experimental Groups	Pre test score	25	25	19.50	22.38	2.88*	1.19	.020	<0.05
	Skill test score	25	25	19.23	22.65	3.42*	1.28	.011	<0.05
	NVIT	25	25	19.20	22.68	3.48*	1.27	.009	<0.05
	CEI	25	25	19.24	22.64	3.40*	1.27	.010	<0.05
	SES	25	25	19.46	22.43	2.97*	1.26	.023	<0.05
	Total effect of Covariate	25	25	19.59	22.29	2.71*	1.25	.036	<0.05

The multiple comparison tables 155 shows the results that all the significant values corresponding to adjusted mean scores of process skill scores between control and experimental group among females when controlling covariates individually and taken together are less than 0.05 level of significance. So it can be said that the difference in adjusted mean scores is significant. When comparing adjusted means it is seen that adjusted mean scores are maximum in an experimental group so it can infer that new instructional strategy is more effective in improving Process Skills in Social Science than the existing teaching method.

CHAPTER V

SUMMARY OF PROCEDURE, FINDINGS AND SUGGESTIONS

- *Study in Retrospect*
- *Major Findings of the Study*
- *Tenability of Hypotheses*
- *Conclusion*
- *Educational Implications of the Study*
- *Suggestions for Further Research*

SUMMARY OF PROCEDURE, FINDINGS AND SUGGESTIONS

This chapter includes the summary, major findings, conclusion, education implication and suggestions for further study

Study in Retrospect

Restatement of the Problem

The study was conducted to check effectiveness of an Instructional approach in terms of emotional regulation and process skills in social science. So the study has entitled "**Effectiveness of Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science among Secondary School Students of Kerala**"

Variables of the Study

This study is intended to finding the "Effectiveness of Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science among Secondary School students of Kerala"

Independent Variables

The independent variables of the study are Anchored Instructional Approach in Social Science Anchored Instructional Approach and Constructivist Approach

Dependent Variables

The dependent variables of the study are Emotional Regulation and Process Skills in Social Science

Control Variables

The variables controlled for the present study were the Non-Verbal Intelligence and Class room Environment Inventory. The variables are controlled with a view to equate the two groups, namely experimental and control group for the study

Objectives of the Study

1. To find out the existing level of emotional regulation of secondary school students in total sample and sub samples of gender and locale
2. To compare the mean pre test scores, post test scores and gain scores of Experimental group and control group of Emotional Regulation in total sample and component wise
3. To compare the mean pre test scores, post test scores and gain scores of experimental group and control group of Process Skills in Social Science in total sample and component wise
4. To compare the effectiveness of Anchored Instructional Approach with that of existing method of teaching on Emotional Regulation and process skills in social science

Hypotheses of the Study

1. There will be no significant difference in mean scores of existing level of Emotional Regulation of secondary school students in
   a) Total sample
   b) Sub sample
   i. Gender (boys and girls)
   ii. Locale (urban and rural)

2. There will be no significant difference in the pre-test mean scores of Emotional Regulation of the Experimental and Control groups for
   a) Total Sample
   b) Component wise
      i. Self Blame
      ii. Acceptance
      iii. Rumination
      iv. Positive Refocusing
      v. Refocus on Planning
      vi. Positive Reappraisal
      vii. Putting into perspective
      viii. Catastrophazing
      ix. Others Blame

3. There will be significant difference in the mean pre-test and post-test scores of Emotional Regulation of the Experimental group for
   a) Total Sample
   b) Component wise
      i. Self Blame
      ii. Acceptance
      iii. Rumination
      iv. Positive Refocusing
      v. Refocus on Planning
      vi. Positive Reappraisal

vii. Putting into perspective

viii. Catastrophazing

ix. Others Blame

4. There will be significant difference in the mean pre-test and post-test scores of Emotional Regulation of the Control groups for

a) Total Sample

b) Component wise

i. Self Blame

ii. Acceptance

iii. Rumination

iv. Positive Refocusing

v. Refocus on Planning

vi. Positive Reappraisal

vii. Putting into perspective

viii. Catastrophazing

ix. Others Blame

5. There will be significant difference in the mean post-test scores of Emotional Regulation of the Experimental and Control groups for

a) Total Sample

b) Component wise

i. Self Blame

ii. Acceptance

iii. Rumination

iv. Positive Refocusing

v. Refocus on Planning

vi. Positive Reappraisal

vii. Putting into perspective

viii. Catastrophazing

ix. Others Blame

6. There will be significant difference in the mean gain scores of Emotional Regulation of the Experimental and Control groups for

a) Total Sample

b) Component wise

i. Self Blame

ii. Acceptance

iii. Rumination

iv. Positive Refocusing

v. Refocus on Planning

vi. Positive Reappraisal

vii. Putting into perspective

viii. Catastrophazing

ix. Others Blame

7. There will be no significant difference in the pre-test mean scores of Process Skills in Social Science of the Experimental and Control groups for

a) Total Sample

b) Component wise

i. Classify

ii. Observe

iii. Locate

iv. Predict

v. Synthesis
vi. Evaluate
vii. Interpret
viii. Measure

8. There will be significant difference in the mean pre-test and post-test scores of Process Skills in Social Science of the Experimental group for

a) Total Sample

b) Component wise

i. Classify
ii. Observe
iii. Locate
iv. Predict
v. Synthesis
vi. Evaluate
vii. Interpret
viii. Measure

9. There will be significant difference in the mean pre-test and post-test scores of Process Skills in Social Science of Control groups for

a) Total Sample

b) Component wise

i. Classify
ii. Observe
iii. Locate
iv. Predict

v. Synthesis

vi. Evaluate

vii. Interpret

viii. Measure

10. There will be significant difference in the mean post-test scores of Process Skills in Social Science of the Experimental and Control groups for

a) Total Sample

b) Component wise

i. Classify

ii. Observe

iii. Locate

iv. Predict

v. Synthesis

vi. Evaluate

vii. Interpret

viii. Measure

11. There will be significant difference in mean gain scores of Process Skills in Social Science of the Experimental and Control groups for

a) Total Sample

b) Component wise

i. Classify

ii. Observe

iii. Locate

iv. Predict

v. Synthesis
vi. Evaluate
vii. Interpret
viii. Measure

12. There will be significant difference in the adjusted mean scores of Emotional Regulation of Experimental and Control groups by considering pre-test Process Skills in Social Science, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status as Covariates for Total Sample
13. There will be significant difference in the adjusted mean scores of Process Skills in Social Science of Experimental and Control groups by considering pre-test Emotional Regulation, Non-Verbal Intelligence, Classroom Environment and Socio-Economic Status as Covariates for Total Sample.
14. Anchored Instructional Approach has significant effect over existing method of teaching on Emotional Regulation and Process Skills in Social Science.

Methodology

Sample selected for the study

In the present study VIII th standard students of secondary school of Kerala State were considered as the population. Since it is an experimental study the sample selected is small in order to avoid difficulty in conducting experiment. Therefore the investigator select two intact class division of standard VIII from one school as sample, One for experimental group and the

other for control group. The investigator selected 90 students from two classes of one school. The investigator randomly assign one class as experimental and other class as control group. The school Selected was Government Higher Secondary School, Kunnakkavu

Research design

To realize the objectives of the study, investigator formulated Quasi-Experimental Design in which the experiment involves the effectiveness of Anchored Instructional Approach on Emotional Regulation and Process Skills in Social Science. **"**Experimental design is the blue print of the procedures that enables the researcher to test hypotheses by reaching valid conclusions about the relationship between independent and dependent variables" (Best & Kahn, 2008).

In the present study, pre test post test non equivalent group design was used. Among the students one group is referred as the Experimental group and the other group as the Control group. The design is often used in class room experiments when experimental and control groups are such naturally assembled groups as intact classes, which may be similar (Best & Kahn, 2008)

Design of the study

The Pre test - Post test Nonequivalent Groups Design was selected for the study (Best and Khan 2017)

O1 X O2

O3 C O4

O1 O3 Pre-test

O2 O4 Post –tests

X Exposure of a group to experimental (treatment) variable

C Exposure of a group to control condition/ treatment

O Observation or test administered

Tools used for the study

1. Lesson transcript for Anchored Instructional Approach (Aruna & Haris, 2018)
2. Lesson transcript for existing method of teaching (Aruna & Haris, 2018)
3. Emotional Regulation Scale (Aruna & Haris, 2018)
4. Test of Process Skills in Social Science (Aruna, Shiji & Surabi, 2014)

Tools used for equating the group

1. Class Room Environment Inventory (Aruna & Sumi, 2010)
2. Raven's Progressive Matrices (Raven 1958)
3. Socio-economic status Scale (Aruna & Sumi 2010)

Statistical techniques

Descriptive statistics - Arithmetic Mean, Median, Mode, Standard Deviation Skewness, Kurtosis, Range were used.

Test of Significance of Difference between means scores of

- Two independent groups
- Two dependent groups

- Analysis of Covariance (ANCOVA)
- Bonferroni's Test of Post-hoc comparison
- Effect size Cohen's d

Major Findings of the Study

Major findings of the study are given below

Findings of the Preliminary Survey

In the first phase of the study a preliminary survey was conducted to identify the existing level of Emotional Regulation of secondary school students and to study the differences in Emotional Regulation of different sub groups of secondary school students based on gender (Boys/Girls) and Locale (Urban /Rural). Following are the results of preliminary survey.

The level of Emotional Regulation and its component for total sample and subsamples of gender (Boys and Girls) are almost equal when compared

The mean difference scores of Emotional Regulation based on gender obtained is .12 found to be not significant at 0.05 level. This reveals that there is no significant difference in the mean scores of Boys and girls for total sample. The mean difference score of Emotional Regulation based on gender (Boys and Girls) is given below

Total Sample (M Boys =142.81, M Girls =142.64, t=.12, p>0.05)

Component wise mean difference of gender are as follows

Self Blame, (M Boys =11.36, M Girls =11.48, t =0.52, p>05)

Acceptance, (M Boys =18.86, M Girls = 18.82, t= 0.16, p>.05)

Rumination, (M Boys =13.73, M Girls=13.53, t = 0.79, p>.05)

Positive Refocusing, (M Boys=16.47, M Girls =14.71, t =8.87, p<.0.01)

Refocus on Planning, (M Boys=20.2, M Girls =20.23, t =0.85, p>0.01)

Positive Reappraisal (M Boys =15.85 M Girls =15.55, t =1.06, p>0.05)

Putting into Perspective (M Boys=18.23, M Girls= 18.13, t=0.28, p>0.05)

Catastrophizing (M Boys =15.42, M Girls = 17.02, t=7.29, p<0.01)

Blaming Others (M Boys =13.71, M Girls =15.18, t=7.29, p<0.01)

. The result shows that emotional regulation total sample of boys and girls not significant at .05 level. Emotional Regulation Component wise reveals that there is no significant difference in Self Blame, Acceptance, Rumination, Refocus on Planning, Positive Reappraisal, Putting into perspective.

The emotional regulation component such as positive refocusing, Catastrophizing, and Blaming Others have significant difference.

Hence the level of Emotional Regulation of gender in total sample is almost same. and level of Emotional Regulation components of gender is also almost same in a greater extent.

The result was also supported by graphical representation

The level of Emotional Regulation and its component for total sample and subsample Locale (Urban /Rural) are almost equal when compared

The mean difference score of Emotional Regulation based on locale obtained is 1.31 found to be not significant at 0.05 level. This reveals that there is no significant difference in the mean scores of Urban and Rural for

total sample. The mean difference score of Emotional Regulation based on locale (Urban and Rural) is given below

Total Sample, (M Urban=143.93, M Rural=142, t=1.31, p>.05

Component wise mean difference of gender are as follows

Self Blame, (M Urban =11.36, M Rural =11.46, t =0.42, p>.05)

Acceptance, (M Urban=18.50, M Rural = 19.94, t= 7.83, p<0.01)

Rumination,(M Urban =13.55, M Rural =13.66 t = 0.46, p>.05)

Positive Refocusing, (M Urban=15.53, M Rural =14.79, t =2.28, p<.0.05

Refocus on Planning, (M Urban=20.2, M Rural =20.23, t =0.85, p>.0.05

Positive Reappraisal (M Urban =15.85 M Rural =15.55, t =1.06, p>0.05

Putting into Perspective (M Urban=18.23, M Rural=18.13, t=0.28, p>0.05

Catastrophizing (M Urban =16.24, M Rural = 14.44, t=8.77, p<0.01

Blaming Others (M Urban=14.26, M Rural =13.77, t=1.21, p>0.05

The result shows that emotional regulation total sample of boys and girls not significant at .05 level. Emotional Regulation Component wise reveals that there is no significant difference in means of Self Blame, Rumination, Refocus on Planning, Positive Reappraisal, Putting into perspective, Blaming Others.

The components of Emotional Regulation suh as Acceptance, positive refocusing, Catastrophizing, have significant difference .

Hence The level of Emotional Regulation of locale in total sample is almost same. and level of Emotional Regulation components of locale is also almost same in a greater extent.

The result was also supported by graphical representation

Findings of the Experiment

The following are the results of the experiment conducted to study effectiveness of Anchored Instructional Approach in enhancing Emotional Regulation and Process Skills in Social Science.

The pre experimental status of secondary school student in the experimental group and control group was found same for Emotional Regulation and its component wise

Mean difference analysis was done to study whether there exist or not any difference between the experimental and control groups with regard to pre test scores of Emotional Regulation(total and component wise) without controlling the covariate

The t value calculated for Comparison of mean pre test scores of experimental and control group for Emotional Regulation was 1.85 found to be not significant at .05, it reveals that the Emotional Regulation of both groups are almost same for the total sample.

The pre experimental status of mean difference score in Emotional Regulation for total sample is given below

Emotional Regulation, (M Exp=132.67, M Ctrl=128.16 , t=1.84, p>.05

The pre experimental status of Emotional Regulation Component wise mean difference of experimental and control group for emotional regulation are as follows

Self Blame, (M Exp =10.78, M Ctrl =10.98, t =.44, p>.05)

Acceptance, (M Exp=16.56, M Ctrl = 16.8, t= .39, p>0.05)

Rumination,(M Exp =11.84, M Ctrl =12.60 t = 1.75, p>.05)

Positive Refocusing, (M Exp=15.13, M Ctrl =14.51, t =1.24, p>.0.05

Refocus on Planning, (M Exp=18.02, M Ctrl=17.06, t =1.85, p>.0.05

Positive Reappraisal (M Exp =14 M Ctrl =13.55, t =.96, p>0.05

Putting into Perspective (M Exp =16.48, M Ctrl = 16.95, t= .09, p>0.05

Catastrophizing (M Exp =15.33, M Ctrl = 13.24, t=2.92, p<0.01

Blaming Others (M Exp=14.51, M Ctrl =12.82, t=2.51, p<0.05

There was no significant difference in the mean pre-test scores between experimental and control group in Emotional Regulation in total sample. So it can be concluded that the pre experimental status of experimental and control groups are similar in their Emotional Regulation.

Emotional Regulation Component wise pre experimental status reveals that there is no significant difference in Self Blame, Acceptance, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into perspective.

In the components such as Catestrophizing and Others Blame have significant difference .

Hence the pre experimental status of Emotional Regulation component wise also almost same in a greater extent.

The graphical representation of mean pre test scores on Emotional regulation (in total sample and component wise) between experimental and control groups points that the two groups are similar.

Anchored instructional Approach is effective than existing method of teaching in enhancing Emotional Regulation and its component wise of secondary school students in the experimental group

The mean pretest scores and post test scores of Emotional Regulation and its Component wise difference of experimental group are as follows.

The t value calculated for Comparison of mean pre test and post test scores of experimental group for Emotional Regulation was 15.89 found to be significant at 0.01 level. It shows that The mean post test score of Emotional Regulation of secondary school students belonging to experimental group is greater than mean pre test scores for total sample of emotional regulation.

The mean pre test scores and post test scores of Emotional Regulation is given below

Emotional Regulation, (M Pre=132.66, M Post 150.97, t=15.89, $p<0.01$

Component wise mean difference of pre test scores and post test scores of experimental group for emotional regulation are as follows

Self Blame, (M Pre =10.78, M Post =12.71, t =9.02, $p<.01$)

Acceptance, (M Pre=16.56, M Post= 18.11, t= 13.81, $p<0.01$)

Rumination,(M Pre =11.84, M Post =13.82 t = 21.35, $p<.01$)

Positive Refocusing, (M Pre=15.13, M Post=16.57, t =3.47, $p<.0.01$

Refocus on Planning, (M Pre=18.02, M Post=20.71, t =14.77, $p<.0.01$

Positive Reappraisal (M Pre =14 M Post =16.98, t =12.69, $p<0.01$

Putting into Perspective (M pre =16.48, M Post = 18.17, t=9.57, $p<0.01$

Catastrophizing (M Pre =15.33, M Post = 18.06, t=12.62, p<0.01

Blaming Others (M Pre=14.51, M Post=15.73, t=3.58, p<0.01

There was significant difference in the mean pre-test scores and post test scores of experimental group in Emotional Regulation in total sample. So it can be concluded that the mean pre test scores and post test scores of experimental group is different in their Emotional Regulation.

Emotional Regulation Component wise mean pre test and post test scores of experimental group reveals that there is significant difference in Self Blame, Acceptance, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into perspective, Catestrophizing and Blaming Others.

Hence the Anchored Instruction is effective in enhancing Emotional regulation of secondary school students in component wise. The mean post test score of Emotional Regulation of secondary school students belonging to experimental group is greater than mean pre test scores for the components of emotional regulation

The graphical representation of mean pre test scores on Emotional regulation (in total sample and component wise) between experimental and control for total sample and component wise also points that the two groups are similar.

Existing Method of Teaching is effective in enhancing total sample of Emotional Regulation and its component wise of the subjects in the control group

The mean pretest scores and post test scores of Emotional Regulation and its Component wise difference of control group are as follows.

The t value calculated for Comparison of mean pre test and post test scores of control group for Emotional Regulation was 12.89 found to be significant at 0.01 level. It shows that The mean post test score of Emotional Regulation of secondary school students belonging to control group is greater than mean pre test scores for total sample of emotional regulation.

Emotional Regulation, (M Pre=128.15, M Post 142.96, t=12.89, p<0.01)

Component wise mean difference of pre test scores and post test scores of control group for emotional regulation are as follows

Self Blame, (M Exp =10.98, M Ctrl =11.69, t =2.64, p<.01)

Acceptance, (M Exp=16.80, M Ctrl = 16.67, t= -.35, p>0.05)

Rumination,(M Exp =12.60, M Ctrl =12.73 t = .36, p>.05)

Positive Refocusing, (M Exp=14.51, M Ctrl =15.38, t =7.39, p<.0.01)

Refocus on Planning, (M Exp=17.07, M Ctrl=19.64, t =22.08, p<.0.01)

Positive Reappraisal (M Exp =13.56 M Ctrl =15.98, t =9.89, p<0.01)

Putting into Perspective (M Exp =16.55, M Ctrl= 19.20, t=12.52, p<0.01)

Catastrophizing (M Exp =13.24, M Ctrl = 16.53, t=9.79, p<0.01)

Blaming Others (M Exp=12.82, M Ctrl =14.22, t=4.31, p<0.01)

There was significant difference in the mean pre-test scores and post test scores of control group in Emotional Regulation in total sample. So it can be concluded that the mean pre test scores and post test scores of experimental and control groups are different in their Emotional Regulation.

Emotional Regulation Component wise mean pre test scores and post test scores of control group reveals that there is significant difference in Self

Blame, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into perspective, Catestrophizing and Blaming Others have significant difference .

The components of emotional regulation such as Acceptance and Rumination are not significant.

Hence the Anchored Instruction is effective in enhancing Emotional regulation of secondary school students in component wise. The mean post test score of Emotional Regulation of secondary school students belonging to experimental group is greater than mean pre test scores for components of emotional regulation in great extent

The graphical representation of mean pre test scores on Emotional regulation (in total sample and component wise) between experimental and control for total sample and component wise also points that the two groups are similar.

Anchored Instructional Approach is effective in enhancing Emotional Regulation and its component wise of secondary school students in the experimental and control group

Mean difference analysis was done to study whether there exist or not any difference between the experimental and control groups with regard to mean post test scores of Emotional Regulation(total and component wise).

The t value calculated for Comparison of mean pre test scores of experimental and control group for Emotional Regulation was 3.29 found to be significant at .01, it reveals that the Emotional Regulation of experimental

and control groups are significant difference in mean post test scores. The mean post test score of Emotional Regulation of secondary school students belonging to experimental group is greater than mean post test scores of control group for total sample of emotional regulation.

The post test mean difference score between experimental and control groups in Emotional Regulation for total sample is given below

Emotional Regulation, (M Exp=150.98, M Ctrl 142.96, t=3.29, p<0.01

Component wise mean difference of post test scores of experimental group and control group emotional regulation are as follows.

Self Blame, (M Exp =12.71, M Ctrl =11,68, t =2.03, p<.05)

Acceptance, (M Exp=18.11, M Ctrl =16.66 , t= 2.07, p<0.05)

Rumination,(M Exp =13.82, M Ctrl =12.73 t = 1.99, p<.05)

Positive Refocusing, (M Exp=16.58, M Ctrl =15.38, t =2.01, p<.0.05

Refocus on Planning, (M Exp=20.71, M Ctrl=19.64, t =2.01, p<.0.05

Positive Reappraisal (M Exp =16.98 M Ctrl =15.98, t =2.02, p<0.05

Putting into Perspective (M Exp =18.17, M Ctrl = 18.20, t=1.55, p>0.05

Catastrophizing (M Exp =18.06, M Ctrl = 16.53, t=2.05, p<0.05

Blaming Others (M Exp=15.73, M Ctrl =3.50, t=2, p<0.05

There was significant difference in the mean post test scores between experimental and control group in Emotional Regulation in total sample. So it can be concluded that the post test scores of experimental and control groups are significant difference in their Emotional Regulation.

Emotional Regulation Component wise pre experimental status reveals that there is significant difference in Self Blame, Acceptance, Rumination,

Positive Refocusing, Refocus on Planning, Positive Reappraisal, Catastrophizing and Blaming Others

In the component of emotional regulation putting into perspective has no significant difference.

Hence the post test scores of Emotional Regulation component wise also significantly different between experimental and control group in a greater extent. The mean post test score of Emotional Regulation of secondary school students belonging to experimental group is greater than mean pre test scores for components of emotional regulation.

The graphical representation of mean post test score of Emotional regulation (in total sample and component wise) between experimental and control groups points that the two groups are significantly different.

Anchored Instructional Approach is more effective than existing method of teaching in enhancing Emotional Regulation and its component of secondary school students in the experimental and control group

Mean difference analysis was done to study whether there exist or not any difference between the experimental and control groups with regard to mean gain scores of Emotional Regulation(total and component wise).

The t value calculated for Comparison of mean gain scores of experimental and control group for Emotional Regulation was 2.16 found to be significant at .05. It reveals that the Emotional Regulation of experimental and control groups are significant difference in mean gain scores. The mean gain score of Emotional Regulation of secondary school students belonging to

experimental group is greater than mean gain scores of control group for total sample of emotional regulation.

The mean gain score difference between experimental and control groups in Emotional Regulation for total sample is given below

Emotional Regulation, (M Exp=18.31, M Ctrl 14.8, t=2.16, $p<0.05$

Component wise mean difference of gain scores of experimental group and control group emotional regulation are as follows

Self Blame, (M Exp =1.93, M Ctrl =.71, t =3.56, $p<.01$)

Acceptance, (M Exp=1.56, M Ctrl =-.13 , t=4.29 $p<0.01$)

Rumination,(M Exp =1.98, M Ctrl =.13 t = 4.89, $p<.01$)

Positive Refocusing, (M Exp=1.44, M Ctrl =.87, t =1.34, $p>.0.05$

Refocus on Planning, (M Exp=2.69, M Ctrl=2.58, t =.51, $p>.05$

Positive Reappraisal (M Exp =2.98 M Ctrl =2.42, t =1.64, $p>.05$

Putting into Perspective (M Exp =1.69, M Ctrl = 1.24, t=1.47, $p>0.05$

Catastrophizing (M Exp =2.73, M Ctrl = 3.29, t=1.39, $p>0.05$

Blaming Others (M Exp=1.22, M Ctrl =1.40, t=.38, $p>0.05$

There was significant difference in the mean gain scores between experimental and control group in Emotional Regulation in total sample. So it can be concluded that the gain scores of experimental and control groups are significant difference in their Emotional Regulation.

Gain score of Emotional Regulation Component wise reveals that there is no significant difference in Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into perspective, Catastrophizing and Blaming Others.

In the gain scores of component of emotional regulation Self Blame, Acceptance, Rumination shows significant difference between experimental and control group.

Hence the gain scores of Emotional Regulation component wise are no significantly different between experimental and control group in a greater extent. The mean gain score of Emotional Regulation of secondary school students belonging to experimental group and control group for components of emotional regulation are almost same.

The graphical representation of mean gain score of Emotional regulation (in total sample) between experimental and control groups points that the two groups are significantly different.

The graphical representation of mean gain scores of components of emotional regulation between experimental and control groups points that the two groups are not significantly different

The pre experimental status of secondary school student in the experimental group and control group was found same for Process Skills in Social Science and its component wise

Mean difference analysis was done to study whether there exist or not any difference between the experimental and control groups with regard to pre test scores of Process Skills in Social Science (total and component wise) without controlling the covariate.

The t value calculated for Comparison of mean pre test scores of experimental and control group for Emotional Regulation was ,58 found to be

not significant at .05, it reveals that the Process Skills of both groups are almost same for the total sample.

The pre experimental status of mean difference score in Process Skills in Social Science for total sample is given below

Process Skills in Social Science (M Exp=12.73, M Ctrl=12.44, t=.58, p>0.5

The pre experimental status of Component wise mean difference of experimental and control groups are as follows

Classify, (M Exp =1.98, M Ctrl =1.98, t =.00, p>.05)

Observe, (M Exp=2.18, M Ctrl = 2.13, t= -3.31, p>0.05)

Locate,(M Exp =2.04, M Ctrl =2.04 t = .00, p>.05)

Predict, (M Exp=1.58, M Ctrl =1.56, t =.12, p>.0.05

Synthesize (M Exp=1.02, M Ctrl=.87, t =1.09, p>.0.05

Evaluate (M Exp =1.47 M Ctrl =1.44, t =.12, p>0.05

Interpret (M Exp =1.04, M Ctrl = 1.02, t=.15, p>0.05

Measure (M Exp =1.42, M Ctrl = 1.40, t=.14, p>.05

There was no significant difference in the mean pre-test scores between experimental and control group in Process Skills in social science in total sample. So it can be concluded that the pre experimental status of experimental and control groups are similar in their Process Skills in Social Science.

Process Skills in social science component wise pre experimental status reveals that there is no significant difference in Classify, Observe, Locate, Predict, Synthesize, Evaluate, Interpret and Measure. .

Hence the pre experimental status of Process Skills in Social Science component wise also almost same.

The graphical representation of mean pre test scores on Process skills in Social Science(in total sample and component wise) between experimental and control groups points that the two groups are similar.

Anchored instructional Approach is effective than existing method of teaching in enhancing Process Skills in Social Science and its component wise of secondary school students in the experimental group

The mean pretest scores and post test scores of Process Skills in Social Science and its Component wise difference of experimental group are as follows.

The t value calculated for Comparison of mean pre test and post test scores of experimental group for Process Skills in Social Science was 14.67 found to be significant at 0.01 level. It shows that The mean post test score of Process Skills in Social Science of secondary school students belonging to experimental group is greater than mean pre test scores for total sample of Process Skills in Social Science

The mean pre test scores and post test scores of Process Skills in Social Science is given below

Process Skills in Social Science (M pre=12.73, M post=22.96, t=.14.67, $p<0.5$

Component wise mean difference of pre test scores and post test scores of experimental group for Process Skills in Social Science are as follows

Classify, (M Pre =1.98, M Post =3.58, t =8.23, p<.01)

Observe, (M Pre=2.18, M Post = 3.44, t= 10.50, p<.01)

Locate,(M Pre =2.04, M Post =2.8 t = 4.33, p<.01)

Predict, (M Pre=1.58, M Post =1.36, t =11.38, p<.0.01

Synthesize (M Pre=1.02, M Post=1.48, t =2.79, p<.0.01

Evaluate (M Pre =1.47 M Post =2.84, t =7.19, p<.01

Interpret (M Pre =1.04, M Post = 2.82, t=8.44, p<.01

Measure (M Pre =1.42, M Post = 2.71, t=7.21, p<.01

There was significant difference in the mean pre-test scores and post test scores of experimental group of Process Skills in Social Science in total sample. So it can be concluded that the mean pre test scores and post test scores of experimental group is different in their Process Skills in Social Science

Process Skills in Social Sciece Component wise mean pre test and post test scores of experimental group reveals that there is significant difference in Classify, Observe, Locate, Predict, Synthesize, Evaluate, Interpret and Measure.

Hence the Anchored Instruction is effective in enhancing Process Skills in Social Science of secondary school students in component wise. The mean post test score of Process Skills in Social Science of secondary school students belonging to experimental group is greater than mean pre test scores for the components of Process Skills in Social Science.

The graphical representation of mean pre test scores and post test scores of process skills in social science (in total sample and component wise) between experimental and control for total sample and component wise also points that the two groups are significantly different.

Existing Method of Teaching is effective in enhancing total sample of Emotional Regulation and its component wise of the subjects in the control group

The mean pretest scores and post test scores of Process Skills in Social Science and its Component wise difference of control group are as follows.

The t value calculated for Comparison of mean pre test and post test scores of control group for Emotional Regulation was 13.23 found to be significant at 0.01 level. It shows that The mean post test scores of Process Skills in Social Science of secondary school is greater than mean pre test scores of control group for total sample of Process Skills in Social Science

Process Skills in Social Science (M pre=12.44, M post=20.33, t=.13.22, p<0.1

Component wise mean difference of pre test scores and post test scores of control group for emotional regulation are as follows

Classify, (M Pre =1.98, M Post =3.62, t =8.48, p<.01)

Observe, (M Pre=2.13, M Post = 3.51, t=11.08, p<.01)

Locate,(M Pre =2.04, M Post =2.38 t = 1.39, p>.01)

Predict, (M Pre=1.55, M Post =1.89, t =8.39, p<.0.01

Synthesize (M Pre=.86, M Post=1.08, t =1.49, p>.0.01

Evaluate (M Pre =1.44 M Post =2.33, t =3.79, p<.01

Interpret (M Pre =1.02, M Post = 2.27, t=5.37, p<.01

Measure (M Pre =1.40, M Post = 2.27, t=5.49, p<.01

There was significant difference in the mean pre-test scores and post test scores of control group of Process Skills in Social Science in total sample. So it can be concluded that the mean pre test scores and post test scores of control group is different in their Process Skills in Social Science

Process Skills in Social Science Component wise mean pre test and post test scores of control group reveals that there is significant difference in Classify, Observe, Predict, Evaluate, Interpret and Measure.

There is no significant difference in the components of Process Skills in Social Science such as Locate and Synthesize

Hence the Existing Method of teaching is effective in enhancing Process Skills in Social Science of secondary school students in component wise. The mean post test score of Process Skills in Social Science of secondary school students belonging to control group is greater than mean pre test scores for the components of Process Skills in Social Science.

The graphical representation of mean pre test scores and post test scores of process skills in social science (in total sample and component wise) between experimental and control for total sample and component wise also points that the two groups are significantly different.

Anchored Instructional Approach is effective in enhancing Process Skills in Social Science and its component wise of secondary school students in the experimental and control group

Mean difference analysis was done to study whether there exist or not any difference between the experimental and control groups with regard to

mean post test scores of Process Skills in Social Science (total and component wise).

The t-value calculated for Comparison of mean pre test scores of experimental and control group for Emotional Regulation was 2.81 found to be significant at .01, it reveals that the Process Skills in Social Science of experimental and control groups are significant difference in mean post test scores. The mean post test score of Process Skills in Social Science of secondary school students belonging to experimental group is greater than mean post test scores of control group for total sample of emotional regulation.

The post test mean difference score between experimental and control groups in Process Skills in Social Science for total sample is given below

Process Skills in Social Science (M Exp=22.96, M Ctrl=20.33, t=.2.81, p<0.1

Component wise mean difference of post test scores of experimental group and control group of process skills in social science are as follows.

Classify, (M Exp =3.58, M Ctrl =3.62, t =.40, p>.05)

Observe, (M Exp=3.44, M Ctrl = 3.51, t=.56, p>.05)

Locate,(M Exp =2.8, M Ctrl =2.38 t = 2., p<.05)

Predict, (M Exp=3.27, M Ctrl =2.89, t =2.02, p<.0.05

Synthesize (M Exp=1.49, M Ctrl=1.08, t =2.28, p<.05

Evaluate (M Exp =2.84 M Ctrl =2.33, t =1.99, p<.05

Interpret (M Exp =2.82, M Ctrl = 2.27, t=2.19, p<.05

Measure (M Exp =2.71, M Ctrl = 2.27, t=2.15, p<.05

There was significant difference in the mean post -test scores between experimental and control group in Process Skills in social science in total sample. So it can be concluded that the post test scores of experimental and control groups are significantly different in their Process Skills in Social Science.

Process Skills in social science component wise post test reveals that there is significant difference in, Locate, Predict, Synthesize, Evaluate, Interpret and Measure.

There is no significant difference in the components of Process Skills in Social Science such as Classify, Observe

Hence the post test scores of Process Skills in Social Science component are significantly different

The graphical representation of mean post test scores on Process skills in Social Science (in total sample and component wise) between experimental and control groups points that the two groups are statistically different in a greater extent.

Anchored Instructional Approach is more effective than existing method of teaching in enhancing Emotional Regulation and its component of secondary school students in the experimental and control group

Mean difference analysis was done to study whether there exist or not any difference between the experimental and control groups with regard to mean gain scores of Process Skills in Social Science (total and component wise).

The t value calculated for Comparison of mean gain scores of experimental and control group for Emotional Regulation was 2.54 found to be significant at .05. it reveals that the Process Skills in Social Science of experimental and control groups are significant difference in mean gain scores. The mean gain score of Process Skills in Social Science of secondary school students belonging to experimental group is greater than mean gain scores of control group for total sample of emotional regulation.

The mean gain score difference between experimental and control groups in Process Skills in Social Science for total sample is given below

Process Skills in Social Science (M Exp=10.22, M Ctrl =7.88, t=.2.54, p<0.5

Component wise mean difference of gain scores of experimental group and control group Process Skills are as follows

Classify, (M Exp =1.6, M Ctrl =1.64, t =.16, p>.05)

Observe, (M Exp=1.26, M Ctrl = 1.38, t=.64, p>.05)

Locate,(M Exp =.75, M Ctrl =.33 t = 1.42, p>.05)

Predict, (M Exp=1.68, M Ctrl =1.33, t =1.64, p>.0.05

Synthesize (M Exp=.47, M Ctrl=.22, t =1.09, p>.05

Evaluate (M Exp =1.38 M Ctrl =.89, t =1.61, p>.05

Interpret (M Exp =1.77, M Ctrl = 1.24, t=1.70, p>.05

Measure (M Exp =1.28, M Ctrl = .86, t=1.77, p>.05

There is significant difference in the mean gain scores between experimental and control group in Process Skills in social science in total

sample. So it can be concluded that the Anchored Instructional Approach is more effective than existing method of teaching in enhancing Emotional Regulation and its component of secondary school students in the experimental and control group in Process Skills in Social Science

Gain scores of Process Skills in social science component wise reveals that there is no significant difference in Classify, Observe Locate, Predict, Synthesize, Evaluate, Interpret and Measure.

Hence the gain scores of Process Skills in Social Science components are not significantly different. The mean gain score of Process Skills in Social Science components of secondary school students belonging to experimental group and control group is almost same.

The graphical representation of mean post test scores on Process skills in Social Science(in total sample and component wise) between experimental and control groups points that the two groups are statistically different.

Summary of ANCOVA of Emotional Regulation (total)-total, Boys and Girls samples

The Result of ANCOVA Carried out on the dependent Variable Emotional Regulation by considering pre-process skills in social science non verbal intelligence , class room environment, SES as co-variable in the results of Bonferonis Test of Post Hoc Comparison are summarised in table 155.

Table 155

ANCOVA Post Hoc Comparison

Sample	Covariate	F	Adjust Means		t-value
			Experiment Group	Control Group	
Total Sample	Pre test score	0.29	149.23	144.70	4.53
	Process skill score	1.247	150.86	143.07	7.79
	NVI	0.778	150.99	142.94	8.04
	C E	0.994	150.97	142.96	8.01
	SES	0.850	151.04	142.88	8.15
	Companied Effect	1.735	149.07	144.86	4.20
Boys	Pre test score	0.88	145.56	141.84	3.73
	Process skill score	0.08	148.04	139.35	8.69
	NVI	0.04	147.78	139.62	8.17
	C E	0.00	148.00	139.39	8.61
	SES	0.34	148.2	139.2	9.
	Companied Effect	1.2	145.54	141.85	3.69
Girls	Pre test score	152.16	146.99	0.13	5.17
	Process skill score	152.84	146.32	2.10	6.51
	NVI	153.29	145.87	0.48	7.41
	C E	153.37	145.78	1.77	7.59
	SES	153.2	145.95	1.49	7.25
	Companied Effect	151.65	147.5	0.19	4.14

It is clear from the table 155 that all the ‘F’ values obtained for the effect of instructional strategy

Controlling the individual and companied effects of the four co- variables are not significant and the respective ‘t ’values of the post hoe comparison of adjusted , means of emotion regulation and the respective ‘t’ values of adjusted means of emotional regulation where statistically significantly for total sample an sub sample. More ever in all the cases greater adjusted mean scores of emotional regulation where associated with experimental group

Summary of ANCOVA of Process Skills in Social Science (total)-total, Boys and Girls samples

The Result of ANCOVA Carried out on the dependent Variable process skills in social science by considering pre-emotional regulation non verbal intelligence, class room environment, SES as co-variable in the results of Bonferonis Test of Post Hoc Comparison are summarised in table 156.

Table 156

ANCOVA Post Hoc Comparison

Sample	Covariate	F	Adjust Means		t-value
			Experiment Group	Control Group	
Total Sample	Pre test score	1.00	23.06	20.23	2.83
	Process skill score	0.06	22.88	2.41	2.46
	NVI	1.03	22.97	20.32	2.65
	C E	1.04	22.96	20.33	2.63
	SES	1.33	22.8	20.48	2.32
	Companied Effect	0.00	22.83	20.46	2.36
Boys	Pre test score	0.10	--	--	--
	Process skill score	0.3	--	--	--
	NVI	2.37	--	--	--
	C E	0.03	--	--	--
	SES	0.08	--	--	--
	Companied Effect	0.28	--	--	--
Girls	Pre test score	1.05	22.38	19.05	2.88
	Process skill score	0.15	22.65	19.23	3.41
	NVI	1.35	22.68	19.20	3.47
	C E	0.93	22.64	19.24	3.40
	SES	0.51	22.43	19.46	2.97
	Companied Effect	0.14	22.29	19.59	2.71

It is clear from the table 156 that all the 'F' values obtained for the effect of anchored instructional approved after Controlling the individual and companied effects of the four co- variables are not significant and the respective 't 'values of the post hoe comparison of adjusted , means of emotion regulation and the respective 't' values of adjusted means of process skill in social science where statically significantly for total sample an sub sample. more ever in all the cases greater adjusted mean scores of process skill in social science were associated with experimental group for total sample for sub sample boys for girls.

Tenability of Hypotheses

The tenability of the hypotheses formulated for the present study based on the major findings of the study.

- First hypothesis of the study states that "There will be no significant difference in the mean scores of existing level of emotional regulation of secondary school students in total sample and sub samples of Gender (Boys/Girls) and Locale (Urban/Rural)".

  Statistically significant difference was not found in the mean Emotional Regulation scores of gender (Boys and Girls) and Locale (Urban and Rural) in the total sample. Among Emotional Regulation component scores of sub samples of gender and locale significant difference was found in three components such as Positive refocusing, Catastrophizing, Blaming Other among gender all other six components have showing no significant difference in gender. Similarly emotional regulation components such as Acceptance, Positive Refocusing, Re focus

on planning, and Catastrophizing have only significant difference among different students belongs to urban and rural locality other five components have no difference. So it is found that there is no significant difference in Total sample, Gender (Boys and Girls), and Locale (Urban and Rural) in a greater extent.

Therefore the first hypothesis is accepted

- Second hypothesis states that "There will be no significant difference in the pre-test scores, of control group and experimental group in Emotional Regulation in total sample and component wise".

The result reveals that Statistically significant difference was not found in the mean Emotional Regulation scores in total sample. Among the components of Emotional Regulation significant difference found only in catastrophizing and Other Blame between mean pre test scores of experimental and control group remaining seven components have no significant. So it is found that there is no significant difference in a greater extent.

Therefore second hypothesis is accepted

- Third hypothesis states that "There will be significant difference between the pre test and post-test scores experimental group in Emotional Regulation for total sample and component wise".

Statistically significant difference was found between mean pre test and post test scores of experimental group of emotional regulation in total sample and among all components.

Therefore third hypothesis fully accepted.

- Fourth hypothesis states that "There will be significant difference in the pre-test and post-test scores of emotional regulation in control group in total sample and component wise".

Statistically significant difference was found between pre test post test control group scores of emotional regulation. Among components of Emotional Regulation statistically significant difference was found in total sample and in all components of Emotional Regulation except Acceptance and Rumination. So it is found that there is significant difference in a greater extent.

There for fourth hypothesis was accepted

- Fifth hypothesis states that "There will be significant difference in the post test scores of experimental and control group for Emotional Regulation for total sample and component wise"

The result revealed that statistically significant difference was found between post test scores of experimental and control group for Emotional Regulation. Among components of Emotional Regulation statistically significant difference was found in total sample and in all components except putting into perspective a greater extent

Therefore the fifth hypothesis was accepted

- Sixth hypothesis states that "There will be significant difference in the gain scores, of control group and experimental group in Emotional Regulation. and component wise"

The result revealed that statistically significant difference was found between gain scores of experimental and control group for

Emotional Regulation among the components such as Self Blame, Acceptance and Rumination all other seven components and in total sample have no significant difference found. So statistically significant difference was partially found in the mean gain score of emotional regulation and its components.

Therefore the Sixth hypothesis was partially accepted

- Seventh hypothesis states that "There will be no significant difference in the pre-test scores, of control group and experimental group in process skill for total sample and component wise"

Statistically no significant difference was found between mean pre test scores of experimental and control group of Process Skills in Social Science in total sample and among all components.

Therefore Seventh hypothesis was fully accepted.

- Eighth hypothesis stated that "There will be significant difference in the pre-test and post-test scores of process skills in social science in experimental group in total sample and component wise". It reveals that Statistically significant difference was found between mean pre test and post test scores of experimental group of process skills in Social Science total sample and among all components.

Therefore eighth hypothesis was fully accepted.

- Ninth hypothesis stated that "There will be significant difference in the pre-test and post-test scores of process skills in social science of control group".

Statistically significant difference was found between pre test post test control group scores of Process Skills in Social Science. In total

sample and among components of Process Skills in Social Science statistically significant difference was found except locate and synthesize. So it is found that there is significant difference in a greater extent.

Therefore ninth hypothesis was accepted

- Tenth hypothesis stated that "There will be significant difference in the post-test scores, of control group and experimental group in process skills in social science for total sample and component wise".

Result revealed that statistically significant difference was found between post test scores of experimental and control group for Process Skills in Social Science. In total sample and among components of Process Skills in Social Science except Classify and Observe. So it is found statistically significant difference in a greater extent

Therefore Tenth hypothesis was accepted

- Eleventh hypothesis stated that "There will be significant difference in the gain scores, of control group and experimental group in process skills in social science"

Statistically significant difference was found in gain scores of experimental and control group for Process Skills in Social Science in a) total sample. b) among components of Emotional Regulation statistically significant difference was not found.

Therefore Eleventh hypothesis a) accepted and b) rejected.

- Twelfth hypothesis stated that "There is significant difference in the adjusted mean score of Emotional Regulation between experimental and control group by considering mean score in process skills in Social Science, Non Verbal Intelligence, Socio-Economic Status and Class room Environment. Comparison of Experimental and Control group after controlling the covariates on emotional regulation reveals that Anchored Instructional strategy is more effective in teaching emotional regulation . Comparison of Experimental and Control group after controlling the covariates of Emotional Regulation reveals that Anchored Instructional strategy is more effective in teaching process skills in Social Science

  Therefore twelfth hypothesis was accepted

- Thirteenth hypothesis stated that "There is significant difference in the adjusted mean score of process skills in social science between experimental and control group by considering mean scores of emotional regulation, Non Verbal Intelligence, Socio-Economic Status and Class room Environment. Comparison of Experimental and Control group after controlling the covariates on Process Skills in Social Science"

  The study reveals that Anchored Instructional strategy is more effective in teaching process skills in Social Science. Comparison of Control and Experimental group after controlling the covariates on Process Skills in Social Science reveals that Anchored Instructional strategy is more effective in teaching process skills in Social Science

  Therefore thirteenth hypothesis was accepted.

- Fourteenth Hypothesis stated that "Anchored Instructional Approach has significant effect over existing method of teaching on Emotional Regulation and Process Skills in Social Science".

The study reveals that after the treatment of anchored instruction there is significant difference between the experimental and control groups in both variables such as Emotional Regulation and Process Skills in Social Science. So it is found statistically significant

Therefore fourteenth hypothesis was accepted.

Conclusion

From the analysis based on objectives of the presented study the investigator reached some conclusion. The study reveals that Anchored Instruction is more effective than existing method of teaching for developing emotional regulation and process skills in social science of secondary school students. Research sample for experiment were equal in terms of their intelligence, socio economic status and class room environment. Both the group were receiving the same lessons but in different treatment. Pre test scores of emotional regulation and process skills shows the equal status of the two groups. Similarly in terms of the component of emotional regulation such as Self Blame, Acceptance, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into perspective, Catastrophazing , Others Blame also having positive changes after taking class in Anchored Instructional approach. In the component of Process Skills in Social Science such as Classify, Observe, Locate, Predict, Synthesis, Evaluate, Interpret, Measure also shows positive changes after implementing new instructional

approach. It shows the new Instructional approach is more effective in Cognitive, affective and Psychomotor domains of high school students.

The present study has revealed the effectiveness of Anchored instructional Approach over existing method of teaching, as the high mean scores associated with the experimental group to which Anchored Instructional Approach was implemented to the variables Emotional Regulation and Process Skills in social science

Educational Implications of the Study

Teaching learning process are in the way of transformation by various researches and innovations. Teachers, experts and curriculum builders are more focused on child centred instructional method. Drastic changes are evidence in the field of Information and technology, life style and work. Technology provides ample opportunity to students and teachers to work in innovative and interesting way of teaching and learning.

Implication for Classroom

Anchored instructional approach provides a problem situation on which teacher and students work together. Students also learning though cooperative way of learning. It will create more friendly atmosphere among students and teachers. Similarly teacher provide a macro context for learning by presenting a video. Students will be more interested to see a video than listening an oral presentation. So it will make students more active.

Anchored Instructional Approach has more implication in class room such as follows

- Above research findings is a solution for an effective technology based constructivist, child centred teaching strategy because it is effective in cognitive and affective domain of the student.
- It helps to inculcate and transfer certain cognitive and affective skills that expected to spontaneously transferred each student to their real life.
- It provides freedom to the students to see one context in multiple perspective without any restriction. Each student enjoys freedom to use their own intellect as their will and ability.
- Students will be more capable to applying learned content to new situation.
- Attitude and interest towards social science class room will be more positive.
- It will enhance critical thinking and creative thinking among children.
- Retention power of students will increase after learning by anchored instruction.
- Anchored Instructional Approach enhance Analytical and Practical abilities of the students.
- Students will develop the capacity to problem solving, enhance higher order thinking and it will help success in their real life.
- Students will be more motivated in learning.
- Students interactions and social skills more improve.

- It will help students capable in decision making ability and students will have confidence to involve relevant social issues.
- By using audio visual technology and presentation of problem context and cooperative learning creates an interesting classroom environment where students involvement in learning process will increase.

Implications for Teacher Education

Provide training to enable teachers to develop lesson plans and learning experience for teaching.

Provide training to enable teachers to conduct classes in Anchored Instruction.

Teacher and student should be encourage to look at multiple perspective of an issue.

Process Skills in social science is very essential in class room. Anchored instruction enhance process skills in social science. So guide the teacher trainees to develop activities that helps to increase the students abilities for participation, develop right perception through affective learning orientation by Anchored Instruction

Emotional Regulation is very essential for every individuals social life. Anchored instruction enhance Emotional Regulation. So guide the teacher trainees to develop activities that helps to increase the students abilities to control emotional regulation through affective learning orientation by Anchored Instruction.

Other Implications

- Education must help the students for preparing for life. For this mere learning of facts are not enough so development of process skills are helpful to equip the students as a contributing citizen. For this anchored instruction strategy is more effective .
- Emotional regulation is an important aspect equals to cognitive capacities. For the development of an emotionally stable individual teaching in Anchored Instructional Strategy is helpful.
- It is helpful to develop cooperation among students because learning take place in a cooperative learning atmosphere.
- Using videos as macro context helpful to stimulate multi senses. It will be helpful for class room having divergent students.
- National Education Policy 2019 Draft emphasised for technology in education. it observed it has important role in the class room process of teaching, learning. Similarly many commissions and committees emphasised the role of technology in education.

Suggestions for Further Research

- Present study focus on Effectiveness of Anchored Instruction on Emotional Regulation and Process Skills in Social Science. Further study can possible its impact on other relevant variables,
- It confined to small sample in one school. The study can be extended to large sample.

- The experimentation of the new method of teaching can be extended to other subjects.
- Study can be replicated with other classes of primary, secondary and higher secondary levels.
- Study can be conducted by controlling the other variables also.
- The study can be replicated with different experimental design.
- The study is confined to only one district. It can be extended to other district also
- The study can be extended to compare with secondary school of Kerala and Secondary Schools affiliated to C.B.S.E.
- The study can be conducted to compare schools situated in different socio cultural context.
- To strengthen the in service teacher education programme, a research attempt can be made to develop an instructional program based on Anchored Instruction suitable to Indian Condition

REFERENCES

REFERENCES

AAAS. (1965). Pain mechanisms: A new theory. *Science: American Association for the Advancement of Science, 150* (3699), 971-8.

Abbas, N.B. (2008). *Using anchored instruction to teach pre-service teachers to integrate technology into primary science education*. Hong Kong: World Association of Lesson Studies Conference.

Adams, L., Kasserman, J., Yearwood, A., Perfetto. G., Bransford, J., & Franks, J. (1988). The effect of fact versus problem-oriented acquisition. *Memory and Cognition, 16*, 167-175.

Adey, T.N., & Martin, R. (1986). *Emerging in teaching of social science (1st ed.)*. New Delhi: Kanishka.

Adrian, M., Zeman, J., Erdley, C., Lisa,L.,Homan, K., & Sim, L. (2009). Social contextual links to emotion regulation in an adolescent psychiatric inpatient population: Do gender and symptomatology matter? *Journal of Child Psychology and Psychiatry, 50*(11), 1428-36.

Aggarwal, J.C. (2004). *Teaching of social studies: New studies*. New Delhi: Vikas Publishers.

Aktamis, H., & Ergin, O. (2008). The effect of scientific process skills on students' scientific creativity, scientific attitude, and academic achievements. *Asia Pacific Forum on Science Learning and Teaching, 9*, 1.

Al-Suwaidi, M.H., Williams, M.P., & Ottinger, G. (2010). *Application of digital core description methods in a reservoir characterisation study: A review of the traditional versus potential future methods.* Abu Dhabi International Petroleum Exhibition and conference.

American Association for the Advancement of Science [AAAS]. (1993). *Benchmarks for science literacy.* Retrieved from http://www.project 2061.org/publications/bsl/online/index.php.

Anderson, R.D. (2002). Reforming social science teaching: What research says about social inquiry. *Journal of Teacher Education, 13*(1), 1-12.

Andres, M. L., Stelzer, F., Juric, L.C., Introzzi, I., Rodriguez-Carvajal, R., & Navarro-Guzman, J.I. (2017). Emotion regulation and academic performance: A systematic review of empirical relationships. *Psychologia em Estudo, 22*(3), 299-311.

Ann-Margret, R., Lisa, B., & Gunilla, B. (2003). Emotionality, emotion regulation, and adaptation among 5- to 8-year old children. *Emotion*, *3*(1), 30-47.

Ardwey, V. (1993*). Glossary of learning concepts and theory (Anchored instructions)*, S. 03.

Arsenio, W.F. (2002). Emotionality, emotion regulation, and school performance in middle school children. *Journal of School Psychology, 40* (5), 395-413.

Baker, E.A. (2009). Multimedia case based instruction in literacy: Pedagogy, effectiveness and perceptions. *J. Educ. Multimedia, Hypermedia. 18*(3), 249-266. Chesapeake. VA: AACE

Baker, E.A., & Wedman, J. (2000). Lessons learned while using case-based instruction with preservice literacy teachers. In T. Shanahan and F. Rodrigues-Brown (Eds.), *Forty-ninth National Reading Conference Yearbook* (pp.122-136). Chicago: National Reading Conference.

Barab, S.A., & Landa, A. (1997). Designing effective interdisciplinary anchors. *Educational Leadership*, 52-55.

Barbara, W. (1980). *The teaching of social science*. New Jersey: Prentice Hall.

Barbosa, P., & Alexander, L. (2004). Science inquiry in Trie CORI framework. *Motivating reading comprehension: Concept oriented reading instruction*, 113.

Baron, J.B., & Sternberg, R.J. (1987). *Teaching thinking skills*. New York: Freeman.

Barrett, K., & Campos, J. (1987). Perspectives on emotional development II: A functionalist approach to emotions. In J. Olsofsky (Ed.), *Handbook of Infant Development*. New York: Wiley-Interscience.

Bateman, B., Crystal, J., Davidson, H., Holzberg, C.S., McIntire, T., & McLester, S. (2001). Top ten technologies breaking through for schools. *Technology and Learning*.

Bauer, J. W., Ellefsen, E.R., & Hall, A.M. (1994). A model for using anchored instruction in preservice educational technology classes. In J. Willis., B. Robin and D.A. Willis (Eds.). *Technology and Teacher Educational Annual–1994* (pp.131-134). Charlottesville. VA: Association for the advancement of computing in Education

Bauer, J., & Summerville, J. (1996). Anchored instruction in pre-service education technology: A multicultural approach. *Technology and Teacher Education Annual-1996* (pp. 28-30). Charlottesville, VA: Association for the Advancement of computing in Education.

Bauer, J.W. (1998). Anchored instruction in preservice educational computing classes: A research project. *Technology and Teacher Education Annual-1998 (*pp. 241-245). Charlottesville, VA: Association for the Advancement of computing in Education

Baumbach, D., Brewer, S., & Bird. M. (1995) Using anchored instruction in inservice teacher education. *Technology and Teacher Education Annual*-1995 (pp. 809-813). Charlottesville, VA: Association for the Advancement of computing in Education.

Baumbach, D.J., Bird, M.J., & Brewer, S.M. (1994). Doing more with Less: A cooperative model that works. In J. Willis, B. Robin and D. A. Willis (Eds.), *Technology and teacher education Annual -1994*(pp. 323-327). Charlottesville. VA: Association for the Advancement of computing in Education.

Beauchemin, J., Hutchins, T.L., & Patterson, F. (2008). Mindfulness meditation may lessen anxiety, promote social skills, and improve academic performance among adolescents with learning disabilities. *Complementary Health Practice Review, 13*, 34-35.

Beck, I.L., Mckeown, M. G., & Gromoll, E.W. (1989). Learning from social studies text. *Cognition and Instruction, 6*, 99-158.

Bender, P.K., Reinholdt-Dunne., M.L., Esbhorn, B.H., & Pons, F. (2012). Motion dysregulation and anxiety in children and adolescents: Gender differences. *Behavioural Psychology*. doi: http://dx.doi.org/10.1016/j. paid.2012.03.027

Bereiter, C. (1984). How to keep thinking skills from going the way of all frills. *Educational Leadership, 42*, 75-77.

Best, J.W., & Kahn, J.V. (2008). *Research in education*. New Delhi: Prentice Hall of India Pvt. Ltd.

Bottage, A.B., & Ark, V. (2007). Shrinking achievement differences with anchored math problems: Challenges and possibilities. *The Journal of Special Education*, *41*(1), 31-49.

Bottage, A.B., Ark, V. (2002). Weighing the benefits of anchored math instruction for students with disabilities in general education classes. *The Journal of Special Education, 35*(4), 186-200.

Bottage, B., & Tolend, M. (2015). Impact of enhanced anchored instruction in inclusive math class room. *Exceptional Children, 81*(2), 158-175.

Bransford, J. D., & Stein, B. B. (1984). *The ideal problem solver.* New York: Freeman.

Bransford, J. D., & Vye, N. J. (1989). A perspective on cognitive research and its implication for instruction. In L. Resnick & L. Klopfer (Eds.), *Toward the thinking curriculum: Current cognitive research* (pp. 173-205). Alexandria, VA: ASCD.

Bransford, J. D., Franks, J. J., & Sherwood, R.D. (1989). New approaches to instruction: Because wisdom can't be told. In S. Vosniadou and A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 470-497). New York: Cambridge University Press.

Bransford, J. D., Sherwood, R.D., Hasselbring, T.S., Kinzer, C.K., & Williams, S.W. (1990). Anchored instruction: why we need it and how technology can help. In Nix and Sprio (Eds.), *Cognition, Education and Multimedia.* Hillsdale, NJ: Elbaum Associates, 87.

Bransford, J. D., Stein, B. S., Delclose, V., & Littlefield, J. (1986). Computers and problem solving. In C. Kinzer, R. Sherwood, and J. Bransford (Eds.). *Computer Strategies for Education: Foundations and Content Area Application (pp 147-180)*. Ohio: Memil & Co.

Bransford, J. D., Vye, N., Kinzer, C., & Risko, V. (In Press). Teaching Thinking and content knowledge: Toward an integrated approach. In B.F. Jones and L. Idol (Eds.), *Dimension of thinking and cognitive instruction.* Hillsdale, NJ: Eribaum.

Bransford, J., Sherwood, R., Hasselbrig, T., Kinzer, C., & Williams, S. (1990). Anchored instruction: Why we need it and how technology can help. In D. Nix and R. Spiro (Eds.), *Cognition education and multimedia: Exploring ideas in high technology* (pp. 115-141). Hillsdale, NJ: Lawrence Erlbaum.

Bransford, J.D. (1979). *Human cognition: Learning, understanding and remembering.* Belmont, CA; Wadsworth Publishing Co.

Bransford, J.D. (2001). *Anchored instruction*. http://www.radix.net/-eimenn/ enetvc95/glprespa.html. 08.01.2002 tarihindeulasilmistir.

Bransford, J.D., & CTGV. (2001). Cognitive constructivism and social constructivism. *Anchored Instruction, 80-81.*

Bransford, J.D., & Heldmeyer, K. (1983). Learning from children learning. In J. Bisanz, & R. Kail (Eds.), *Learning in children: Progress in cognitive development research (pp. 171-190)*. New York: Springer-Verlag.

Bransford, J.D., & Stein, B.S. (1993). *The ideal problem solver (2nd ed)*. New York: Freeman.

Bransford, J.D., Franks, J.J., Vye, N.J., & Sherwood, R.D. (1989). New approaches to instruction: Because wisdom can't be told in S. Vosniadou and A. Orton (Eds.). *Similarity Analogical Reasoning* (pp. 470-497). New York: Cambridge University Press.

Bransford, J.D., Goldman, S., & Vye, N.J. (1991). Making a difference in people's abilities to think: Reflections on a decade of work and some hopes for the future. In L. Okagaki and R.J. Sternberg (Eds.), *Directors for Development: Influences on Children*, pp. 147-180. Lawrence Erlbaum Associates, Hillsdale, N.J.

Bransford, J.D., Hinzer, C., Risko. V., Rowe, D., & Vye, N. J. (1989). Designing invitations to thinking: some initial thoughts. In S. McCormick, J. Zutell, P. Sherer & P. O'keefe (Eds.), *Cognitive and social perspectives for literacy research and instruction* (pp. 35-55). Chicago, IL: The National Reading Conference.

Bransford, J.D., Sherwood, R.S., Vye, N.J., & Rieser, J. (1986). Teaching thinking and problem solving: Suggestions from research. *American Psychologist, 41*(10), 1078-1089.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32-42.

Brush, T., Glazewski, K., Rutowski, K., Berg, K., & Stromfors. C. (2003). Integrating technology in a field-based teacher training program: The PT3@ ASU project. *Educational Technology Research and Development, 51*(1), 57-72.

Bums, M.S., Haywood, H.C., & Delclos, V.R. (1987). Young children's problem solving strategies: An observational study. *Journal of Applied Developmental Psychology, 8*, 113-121.

Buric, I., & Fenzel, A.C. (2020). Teacher emotional labour, instructional strategies and students academic engagement: A multilevel analysis. *Teachers and Teaching Theory and Practice*. Retrieved from www.research gate.net/publication.

Buric, I., Soric., & Penezic, Z. (2016). Emotion regulation in academic domain: Development and validation. *Academic Emotion Regulation Questionnaire (AERQ) Psychology*. doi : 10.1016/j.paid.2016.02.74.

Campbell-Sills, L., & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualization and treatment of anxiety and mood disorders. In J. J. Gross (Ed.), *Handbook of Emotion Regulation*. New York, NY: Guildford Press.

Campione, J.C., Brown, A.L., & Connell, M.L. (1988). Metacognition: On the importance of understanding what you are doing. In R. Charles & E.A. Silver (Eds.), *The teaching and assessing of mathematical problem solving* (PP. 93-114). Hillsdale, NJ Erlbaum, and National Council of Teachers of Mathematics.

Campos, J.J., Frankel, C.B., & Camras, J.M. (2004). On the nature of emotion regulation. *Child Development, 75*, 377-394.

Chabalengula, V.M., Mumba, F., & Mbews, S. (2012). How pre service teachers' understand and perform science process skills. *Eurasia Journal of Mathematics, Science & Technology Education, 8*(3), 167-176.

Chang, L., Schwartz, D., Dodge, K.K., & McBride-Chang, C.A. (2003). Harsh parenting in relation to child emotion regulation and aggression. *Journal of Family Psychology, 17*(4), 598-604.

Chen, Y.T. (2012). Integrating anchored instructional strategy and modullarry concept into interactive multimedia power point presentation. *International Journal of Physical Science, 7*(1).

Chen, Y.T., Chen, T.J., & Tsai, L.Y. (2011). Development and evaluation of multimedia reciprocal representation instructional materials. *IJPS, 6*(6), 1431-1439.

Collect, L. (1990). *Using a cognitive-process approach to teach social skills*. Retrieved from ERIC Database (ED074121).

Collins, A., & Brown, J.S. (1988). The computer as a tool for learning the rough reflection. In A. Mandl & A. Lesgold (Eds.), *Learning issues for intelligent tutoring system*. New York: Springer-verlag.

Collins, A., Brown, J.S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In J. Larkin (Ed.), *Knowing, learning and instruction: Essays in honor of Robert Glaser*. Hillsdale, NJ: Erlbaum.

Cramer, P. (2008). Seven pillars of defense mechanism theory. *Social and Personality Psychology Compass* , *2*, 1963-1981.

Crotty, M. (1998). Foundations of social research: Meaning and perspective in the research process. London: Sage publications Inc.

CTGV. (1997). The Jasper project: Lessons in curriculum, instruction, assessment, and professional development. Mahwah. NJ: Lawrence Erlbaum Associates

CTGV. (1989). *Enhancing learning in at-risk students: Application of video technology*. Retrieved from ERIC Database (ED 318-464).

CTGV. (1990). Anchored instruction and its relationship to situated cognition. *Educational Researcher, 19* (6), 2-10.

CTGV. (1991). Technology and the design of Generative Learning Environments*, Educational Technology, 31*(5), 238-239.

CTGV. (1992). The Jasper series as example of anchored instruction: Theory, Program description, and assessment. *Educational Psychologist*, *27*(3), 291-315.

CTGV. (1993a). Instruction and situated cognition revisited. *Educational Technology, 33*(3), 52-70.

CTGV. (1993b). Integrated media: Toward a theoretical framework for utilizing their potential. *Journal of Special Education Technology, 7*(2), 71-85.

CTGV. (1998). Designing environments to reveal, support and expand our children's potentials. In S.A. Soraci & W. Mcllvane (Eds.), *Perspective on Fundamental Processes in Intellectual Functioning, 1*, 313-350.

Denham, S.A., & Almeida, M.C. (1987). Children's social problem-solving skills, behavioural adjustment, and interventions: A meta-analysis theory and practice. *Journal of Applied Developmental Psychology, 8*(4), 391-409.

Dewey, I. (1933). *Have we think (rev. ed.)*. Boston: Heath

Dewey, J. (1938). *Experience and education*. New York: Collier Macmillan

Dickinson, G., & Summers, E.J. (2010). (Re) Anchored, video-centered engagement: The transferability of preservice training to practice. *Contemporary Issues in Technology and Teacher Education, 10*(1), 106-118.

Donovan, M. S., Bransford, J.D., & Pellegrino, J.W. (1999). *Committee on Learning Research and Educational Practice*. National Research Council. Washington, DC. National Academic Press.

Duffy, T. M. (1997). Strategic teaching framework: An instructional model for a constructivist learning environment. In C. Dills and A. Romiszowski (Eds.), *Instructional Development State of the Art* (Vol 3). Englewood NJ: Educational Technology Press.

Duffy, T.M., & Jonassen, D. H. (1992). *Constructivism and the technology of instruction: A conversation*. Hillsdale, NJ: Erlbaum.

Ebel, R.L. (1972). *Essentials of educational measurement*. New Jersey; Prentice Hall Inc.

Edelman, L. (2004). A relationship based approach to early intervention. *Resource and Connection, 3*(2), 2-10.

Edward, A.C. (1957). *Techniques of attitude scale construction*. New York: Appleton Century Crafts, Inc.

Edward, A.C. (1969). *Technique of attitude scale construction*. Bombay: Vakils Feffer and Simons Pvt. Ltd.

Edward, A.T. (1982). *Effective teaching and learning in schools.* London: Basi Blackwell Ltd.

Ekman, P.E., & Davidson, R.J. (1994). *The nature of emotion: Fundamental questions*. Oxford University Press.

Ellsworth, P.C., & Scherer. (2003). Appraisal processes in emotion. In R.J. Davidson, K.R. Scherer, and H. Goldsmith (Eds.), *Handbook of Affective Sciences (pp.572-595)*. New York: Oxford University Press.

Erisman, S.M., & Roemer, L. (2010). A preliminary investigation of the effects of experimentally-induced mindfulness on emotional responding to film clips. *Emotion, 10*(1), 72-82.

Farmor, A.S., & Kashdan, T.B. (2012.) Social anxiety and emotion regulation in daily life: Spillover effects on positive and negative social events. *Cognitive Therapy, 41*(2), 152-162.

Ferguson, D. (2001). Anchored instruction using webquests in post-bacca-laureate teacher education course. In J. Price, D. Willis, N. Davis & J. Willis (Eds.). *Proceeding of SITE 2001* (pp. 1624-1625). Norfolk. VA: Association for the advancement of computing in education.

Feyzioglu, B., Demirdag, B., Akyildiz, M., & Altun, E. (2012). Developing of a science process skills test for secondary students: Validity and reliability study. *Educational science: Theory and Practice, 12*(3), 1899-1906.

Fisher, B.L., Allen R., & Kose, G. (1996). The relationship between anxiety and problem solving skills in children with and without learning disabilities. *Journal of learning Disabilities, 29*(4), 439-46.

Frijda, N.H. (1986). *The emotions.* Cambridge, England: Cambridge University Press.

Frijida, N.H. (1993). Moods, emotion episodes, and emotions. In M. Lewis and J.M. Havil (Eds.), *Handbook of emotions* (pp.381-403). New York: Guilford Press.

Garnefski, N., Rieffe, C., Jellesma, F., Terwogt, M.M., & Kraaij, V. (2007). Cognitive emotion regulation strategies and emotional problems in 9-11 year-old children. *European Child and Adolescent Psychiatry, 16*, 1-9.

Gaser, R. (1984). Education and thinking: The role of knowledge. *American Psychologist, 39*, 93-104.

Gibson, J.J. (1979/1986). *The ecological approach to visual perception*. Hillsdale, NJ Erlbaten

Gibson, J.J. (2001). The theory of information pickup and its consequences. *The Ecological Approach to Visual Perception,* 238-263.

Glaser, C.W., Rieth, H.J., Kinzer, C.K., & Peter, J. (1999). A description of the impact of multimedia anchored instruction on classroom interactions. *J. Spe. Edu. Tech., 14*(2), 27-43.

Goldman, S.R., Vya, N.J., Williams, S., Rewey, K., & Pellegrino, J.W. (The Cognition and Technology Group at Vanderbilt) (1991). *Solution space analyses of the Jasper problems and students attempts to solve them*. Paper presented to the annual meeting of AERA, Chicago,IL.

Government of India. (1986). *National Policy on Education*. New Delhi: MHRD.

Government of India. (2020). *National Education Policy 2020*. New Delhi: MHRD.

Gragg, C. I. (1940). Because wisdom can't be told. *Harvant Alumni Bulletin,* 78-84.

Gratz, K. (2007). Targeting emotion dysregulation in the treatment of self-injury. *Journal of Clinical Psychology, 63*(11), 1091-1103.

Graziano, P.A., Reavis, R.D., Keane, S.P., & Calkins, S.D. (2007). The role of emotion regulation in children's early academic success. *Journal of School Psychology, 45*(1), 3-19, 2007.

Greeno, J., Collins, A., & Resnick, L. (1996). Cognition and learning. In D.C. Berliner and R.C. Calfee (Eds.), *Handbook of Educational Psychology*. New York Macmillan.

Gross, J. J. (1999). Emotion regulation: Past, present, future. *Cognition and Emotion*, *13*(5), 551-573.

Gross, J.J. (2001). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science, 10* (6), 214-219.

Gross, J.J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2* (3), 271-299.

Gross, J.J., & Thompson, R.A. (2007). Emotion regulation: Conceptual foundation. In J.J. Gross (Ed.), *Handbook of Emotion Regulation* (pp 3-24). New York: Guilford Press.

Gross, J.J., Richards, J.M., & John, O.P. (2006). Emotion regulation in everyday life. In O.D.K. Snyder, J.A. Simpson and J.N. Hughes (Eds.), *Emotion regulation in couples and families: Pathways to dysfunction and health*. Washington, DC: American Psychological Association.

Grosunan, P. I. (1990). *The making of teacher.* New York: Teacher College Press.

Gulses, A., Cetinkaya, S., Doger, C., & Sahin, E. (2014) Determination of level of uses of basic process skills of higher school students. *Procedia-Social and Behavioural Science, 191*, 644-65.

Hafiz, N.H.H (2015). Emotion Regulation and Academic performance among IIUM students: A preliminary study. *Journal Psikologi Malaysia 29* (2), 81-92.

Hanson, N. R. (1970). A picture theory of theory meaning. In R. G. Colodny (Ed.), *The nature and function of scientific theories* (pp. 233-274). Pittsburg: University of Pittsburg press.

Harlen, W. (1992). *UNESCO source book for science in the primary school: A workshop approach to teacher education*. New Delhi, India: National Book Trust in association with UNESCO.

Hasler, B.S., Kersten, B., & Sweller, J. (2007). Learner control: Cognitive load and instructional animation. *Appl. Cogn. Psy., 21*, 713-729.

Hasselbring, T.S. (1994). Using media for developing mental models and anchoring instruction. *American Annals of the Deaf, 139*, 36-44.

Hasselbring, T.S. (2001). A possible future of special education technology. *Journal of Special Education Technology, 16*, 15-21.

Hastings, P.D., Nuselovici, J.N., Klimes-Dougan, B.K., Kendziora,K.T., Usher, B.A., Ho, M.R., & Zahn-Waxler, C. (2009). Deregulated coherence of subjective and cardiac emotional activation in adolescents with internalizing and externalizing problems. *Journal of Child Psychology and Psychiatry*, *50*(11), 1348-1356.

Hoeksema, S.N. (2012). Emotion regulation and psychopathology: The role of gender. *Annual Review of Clinical Psychology, 8,*161-87.

Hsieh, M., & Stright, A.D. (2012). Adolescents' emotional regulation strategies, self-concept, and internalizing problems. *Journal of Early Adolescence.* doi: 10.1177/0272431611433848.

Izard, C., Stark, K., Trentacosta, C., & Schultz, D. (2008). Beyond emotion regulation: Emotion utilization and adaptive functioning. *Child Development Perspectives, 2*(3), 156-163.

Izard, C.E., & Ackerman, B.P. (2000). Motivational, organizational, and regulatory functions of discrete emotions. In M. Lewis and J.M. Haviland-Jones (Eds.), *Handbook of Emotion* (Vol.II, pp.253-264). New York: Guildford Publications, Inc.

James, W. (1884). What is emotion? *Mind, 4*, 188-204.

Jasper Woodbury Series. (2007). Retrieved from http://peabody.vanderbilt.edu/projects/funded/jasper/jasperhome.html

Johnson-Laird, P.N. (1985). Deductive reasoning ability. In R. J. Stemberg (Ed.), *Human Abilities: An Information Processing Approach.* New York: Freeman

Jonassen, D.H. (2000). Toward a design theory of problem solving. *Educational Technology Research and Development, 48*(4), 63-85.

Jonassen, D.H., & Henning, P. (1999). Mental models: Knowledge in the head and knowledge in the world. *Educational Technology, 39*(3), 37-42

Joormann, J., & Gotlib, I.H. (2010). Emotion regulation in depression: Relation to cognitive inhibition. *Cognition and Emotion, 24*(2), 281-298.

June, J.F. (1969). *Educational theory.* Cambridge, Mass: Belkap Press, Dover Publications.

Kariuki, M., & Duran, M. (2004). Using anchored instruction to teach preservice teachers to integrate technology in the curriculum. *Journal of Technology and Teacher Education.*

Karsli, F., Yeman, F., & Ayas, A. (2010). Prospective chemistry teachers competency of evaluation of chemical experiments in terms of science process skills. *Procedia Social and Bhavioural Sciences, 2*, 778-781 .

Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry, 51*(6), 706-716.

Kinzer, C.K., & Riskom, V.J. (1988). *Macro contexts to facilitate learning.* Paper presented at the 33rd Annual conference of the international Reading Association. Toronto, Canada.

Kivisto, K.L. (2011). *Emotion regulation as a mediator of adolescent development processes and problem outcomes* (Doctoral Dissertation). Retrieved from http:// trace. Tennessee.edu/utk_graddiss/1090.

Kneedler, P.E. (1988). *Assessment of the critical thinking skills in history-social science.* Retrieved from ERIC Database (EJ 37456).

Kokic, I.B., & Kurzterri, L. (2005). Using anchored instruction to evaluate mathematical growth and understanding. *Journal of Educational Technology Systems, 33*(4) 421-436.

Koole, S.L., & Kuhl, J. (2008). Dealing with unwanted feelings: The role of affect regulation in volitional action control. In J.Y. Shah and W.L. Gardner (Eds.), *Handbook of Motivation Science* (pp. 295-307). New York, NY: Guilford Press.

Koole, S.L., VanDillen, L.F., & Sheppes, G. (2009). The self-regulation of emotion. In K.D. Vohs and R.F. Baumeister (Eds.). *Hand Book of Self-Regulation* (Vol. II). New York: Guiford Press.

Kulikowich, J. M., & Young. M.F. (1991). Complementing verbal report data. *Paper presented to the annual meeting of the Northeast Educational Research Association*. Ellenville, NY.

Kurz, T.L. (2005). *A taxonomy of technological tools for mathematics Instruction, California State University, Bakersfield, United States* (Vol. V). Waynesville, NC USA: Society for Information Technology & Teacher Education.

Kuvich, G. (2003). Active vision and image/video understanding with decision structures based on network-symbolic models. *Intelligent Computing: Theory and Applications, 5103*, 205-216.

Laible, D., Carlo,G., Panfile,T., Eye, J., & Parker, J. (2010). Negative emotionality and emotion regulation: A person-centered approach to predicting socio-emotional adjustment in young adolescents. *Journal of Research in Personality, 44*, 621-629.

Laird, J.D., & Brsler, S. (1992). The process of emotional experience: A self-perception theory. In M.S. Clark (Ed.), *Emotion: Review of Personality and Social Psychology, 13*, 213-234. Newbury Park, CA: Sage.

Laird, J.D., Wagener, J.J., Halal, M., & Szegda, M. (1982). Remembering what you feel: Thye effects of emotion on memory. *Journal of Personality and Social Psychology, 42*, 646-657.

Larsen, J.T., Hershfield, H., Stastny, B.J., & Hester, N. (2017). On the relationship between positive and negative affect: their correlation and their co-occurrence. *Emotion, 17* (2).

Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life*. Cambridge, MA: Cambridge University Press.

Lave, J., & Wenger, I. (1991). *Situated legitimate peripheral participation.* Cambridge. MA: Cambridge University Press.

Lazarus, R.S. (1991). *Emotion and adaptation.* Oxford, UK: Oxford University Press.

Levenson. (1999). *The interpersonal functions of emotional cognition and Emotion, 13*(5), 481-504. Tailor and Francis online

Levie, J.R., & Lentz, R. (1982). Effects of text illustrations: A review of research. *Educational Communication and Technology Journal, 30*(4), 195-232.

Love, S.M. (2005). Multi-modality of learning through anchored instruction. *Journal of Adolescent and Adult Literacy, 48*(4), 300-310.

Magnusson, S., Krajak., & Borko, H. (1999). Nature, sources and development of pedagogical content knowledge of pedagogical content knowledge for science teaching. In N. Lederman & J. Guess-Newsome (Eds.). *Examining pedagogical content knowledge.* Dordrecht. The Netherlands: Khrwer Academic.

Mahwaah, N.J., Bransford, J.D., Zeck, L., Schwarts, D.L., Barron, B.J., & Vye, N. (Cognition and Technology Group at Vanderbilt) (2000). Design environments that invite and sustain mathematical thinking. In P. Cobb (Ed.). *Symbolizing and Communicating in Mathematics Classroom* (pp. 275-324). Mahwaah, NJ:Erlbaum

Mauss, B.I., Bunge, S.A., & Gross, J.J. (2007). Automatic emotion regulation. *Social and Personality Psychology Compass, 1* (1), 146-167.

May, D.B., & Etkina, E. (2002). College physics students epistemological self-reflection and its relationship to conceptual learning. *American Journal of Physics, 70*(12), 1249- 1258.

Mayer, E., & Anderson, R. (1991). Animation need narrations. An experimental test of a dual-coding hypothesis. *J. Edu. Psy., 83*(4), 484-490.

Mayer, R.E. (2001). *Multimedia learning*. Cambridge: Cambridge University Pres.

Mayer, R.E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist, 38*(1), 43-52.

McClure., & Nowicki, Jr. (2001). Associations between social anxiety and non-verbal process skill in preadolescent boys and girls. *Journal of Nonverbal Behaviour*, *25*(1), 3-19.

McDermott, L.C. (1990). A perspective on teacher preparation in physics and other sciences: The need for special courses for teachers. *American Journal of Physics*, *58*(8), 734-742.

McDiarmid, G. W. (1990). Challenging prospective teachers belief during early field experience: A quixotic undertaking? *Journal of Teacher Education. 41,* 12-20.

McLarty, K., Goodman, J., Risko, V., Kinzer, C., Vye, N.J., Rowe, D., & Carson, J. (1990). Implementing anchored instruction: Guiding principles for curriculum development. *Paper presented at the Annual Meeting of the National Reading Conference*. Retrieved from ERIC Database (ED 315-736).

Mennin, D.S., Holaway, R.M., Fresco, D.M., Moore, M.T., & Heimberg, R.G. (2007). Delineating components of emotion and its dysregulation in anxiety and mood psychopathology. *Behaviour Therapy, 38*(3), 284-302.

Merriam, S.B. (1988). *Case study research in education: A qualitative approach.* San Francisco: Jossey Bass.

Michaelis, J.V. (1975). *Social studies for children: A guide to basic Instruction (6th ed,)*. New Jersey: Prentice Hall.

Michaelis, J.V. (1980). *Social studies for children: A guide to basic instruction (7th ed.)*. New Jersey: Prentice Hall.

Miller, G.A., & Gildea, P.M. (1987). How children learn words. *Scientific American, 257*(3), 94-99.

Miller, M. L., Moreno, J., Smith, D., & Mayes, J. (2002). Anchored instruction in a web-based adventure games: How does it work? *Information Technology & Teacher Education Annual-2002* (pp. 2128-2132). Norfolk, VA: Association for the Advancement of computing in Education.

Moore, B. (1998). Situated cognition versus traditional cognition theories of learning. *Education* (1), 161.

Moreno, R., & Mayer, R.E. (2000). A coherence effect in multimedia learning: The case for minimizing irrelevant sounds in the design of multimedia instructional messages. *Journal of Educational Psychology, 92*, 117-125.

Morris, S.S., Silk, J.S., Steinberg., Myres, S.S., & Robinson, L.R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*(2), 361-388.

Muthukumar, S.L. (2005). Creating interactive multimedia based educational courseware: Cognition in learning. *Cog. Tech. Week., 7*(1), 46-50.

National Assessment of Educational Progress. (2000). Washington, DC: American Institutes for Research.

National Knowledge Commission, Govt. of India. (2006-09). *Report of Working Group on Engineering Education*, p. 55-60.

National Research Council. (1996). *National science education standards: Observe, interact, change and learn*. National Committee on Science Education Standards and Assessment, Washington, D.C: National Academy Press.

National Research Council. (2004). *Engaging schools: Fostering high school student's motivation to learn.* Washington D.C.: National Academy Press.

NCERT. (2005). *National Curriculum Framework* (NCF). NCERT: New Delhi.

Neil, D.M. (1997). Transforming student assessment. *Phi Delta Kappan, 79*, 1, 34-40.

Oliver, K. (n.d.). *Anchored instruction.* Retrieved from http://www.edtech.vt.edu/edtech/id/models/powerpoint/anchored.pdf.

Ormrod, J.E. (1999). *Human learning (3rd ed.)*. Upper Saddle River, NJ: Prentice Hall.

Ozerbas, M.A. (2003). *Bilgisayar Destekli Baglasik Ogretimin Ogrenci Basansi, Motivasyonuve Transfer Becerilerine Etkisi*. Ankara Universitisi Egitim Bilimleri Enstitusu, Yaymlanmamis Doctora Tezi, s.53.

Ozerbas, M.A. (2016). Learning and teaching theories, approaches and models. *Journal of Educational Technology & Society, 19* (4).

Paige, R., Hickok, E., & Patric, S. (2004). *National education technology plan: Anew golden age in American education*. Washington, D.C: U.S Department of Education.

Palinesar, A. S. (1989). Less chartered waters. *Educational Researcher, 19* (4), 5-7.

Pappas, C. (2015). Instructional design models and theories: Anchored instruction. *E Learning Industry*.

Parkinson, B. (1996). Emotions are social. *British Journal of Psychology, 87*, 663-683.

Pellegrino, J.W., & Brophy, S. (2008). From cognitive theory to instructional Practice: Technology and the evolution of anchored instruction. *Understanding Models for Learning and Instruction*, 277-303.

Pellegrino, J.W., & Glaser, R. (1979). Cognitive correlates and components in the analysis of individual differences. *Intelligence, 3*(3), 187-215.

Philippot, P., Baeyens, C., Douilliez, C., & Francart, B. (2004). Cognitive regulation of emotion: Application to clinical disorders. In P. Philippot and R.S. Feldman (Eds.), *The Regulation of Emotion* (pp. 73-100). New York: Laurence Erlbaum Associates.

Pratt, B. (2019). ETEC 533: Web-Based Inquiry & Scaffolding Online. *ETEC533_Science TechMath*. Retrieved from broganpratt.com.

Putman, R., & Borko, H. (1997). Teacher learning: Implications of new views of cognition. In B. Biddle, T., Good and J. Goodson (Eds.), *International Handbook of Teachers and Teaching* (pp.1223-1296). Dordrecht. The Netherlands: Kluwer Academic

Quintan, M.K., & Antoniados, M. (2018). Thriving on challenges: How immigrant academics regulate emotional experiences during acculturation. *Studies in Higher Education*. Advance online publication. doi: 10.1080/03075079.2018.1512567.

Rauf, R.A.A., Mansor, A.N., Rasal, M.M., & Othman, Z. (2013). Inclusion of science process skills in a science class room. *Science, 1.9*(8).

Raven, J.C. (1958). *Standard progressive matrices sets A, B, C, D & E*. London: M.K. Lewis and Coll. Ltd.

Resnick, L. (1987). *Education and learning to think.* Washington DC: National Academy Press.

Reynolds, K. (1993). Students in cohort programs and intensive schedule classes: Does familiarity breed Differences? *Paper presented at the 18th Annual meeting of the Association for the study of Higher Education.* Pittsburg. PA, November 4-7. Retrieved from ERIC Database (ED365175).

Richard, M.S. (1997). *Research in teaching and learning of social studies in secondary schools (2nd ed.)*. New York: MacMillan Publishing Co. Inc

Rieth, H.J., Bryant, D.P., Kinzer, C.K., Colburn, L.K., Hur, S.J., & Hartman, P. (2003). An analysis of the impact of anchored instruction on teaching and learning activities in two ninth-grade language arts classes. *Remedial and Special Education, 24*(3), 73-84.

Risko, V., Kinzer, C., Vye, N., & Rowe, D. (1990). Effects of video disc macro contexts on comprehension and composition of causally coherent stories. *Paper presented at the annual meeting of the American educational Research Association*. Retrieved from ERIC Database (ED 318-998).

Risko, V.I., Kinzer, C.K., Goodman, J., McLarty, K., Dupree, A., & Martin, H. (1989). Effect of macrocontexts on reading comprehension of stories and vocabulary development. *Paper presented at the annual meeting of the American Educational research Association*, San Francisco, CA.

Roberts, R.D., Schulze, R., Brien, K.O., McCann, C., & Reid, J. (2006). Exploring the validity of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) with established emotions measures. *Emotion, 6*(4), 663.

Saarni, C., Mumme, D., & Campos, J. (1998). Emotional development: Action, communication and understanding. In N. Eisenberg (Ed.), *Handbook of Child Psychology*, (Vol.3 pp.237-309). New York: Wiley.

Sadhana. (2017). *Effect of activity based method on science process skill, academic achievement and attitude of secondary level students* (Doctoral Dissertation). Dayalbagh Educational Institute, Agra.

Salomon, G., & Perkin, D.N. (1989). Rocky road to transfer Rethinking mechanisms of a neglected phenomenon. *Educational Psychologist, 24*(2), 113-142.

Scardamalia, M., & Bereiter, C. (1985). Fostering the development of self-regulation in children's knowledge processing. In S. F. Chipman, J. W. Segal and R. Glaser (Eds.). *Thinking and learning skills; Research and open questions* (Vol. 2, pp. 65-80). Hillsdale, NJ: Eribaum.

Schoenfeld, A. H. (1985). *Mathematical problem solving.* Orlando, FL: Academic Press.

Schoenfeld, A. H. (1988). Problem solving in context(s). In R. Charles and E.A. Silver (Eds.). *The teaching and assessing of mathematical problem solving* (pp. 82-92). Hillsdale, NJ: Erlbaum and National Council of Teachers of Mathematics.

Schwartz, R. J. (1987). Teaching for thinking: A developmental model for the infusion of thinking skills into mainstream instruction. In J. B. Baron and R. J. Stemberg (Eds.), *Teaching Thinking Skills: Theory and Practice* (pp 106-126). NY: Freeman.

Sclibent, G.S., & Baner, N.K., (2017). Emotion regulation and academic underperformance: The role of school burnout. *Psychology, 1*. doi:10.1016/j.lindif. 2017.10.001

Settlage, V. J., & Southerland, S.A. (2007). *Teaching science to every child: Using culture as a starting point.* New York, NY: Routledge.

Shaw, R.E., Turvey, M.T., & Mace, W.M. (1982). Ecological psychology: The consequence of a commitment to realism. In W. Weimer & D. Palermo (Eds.), *Cognition and the Symbolic Processes* (Vol. 2, pp. 159-226). Hillsdale, NJ: Eribaum.

Sherwood, R. D., Kinzer, C. K., Bransford, J.D., & Franks, J. J. (1987). Some benefits of creating macro-contexts for science instruction: Initial findings. *Journal of Research in Science Teaching, 24*(5), 417-435.

Sherwood, R.D., Kinzer, C.K., Hasselbring, T., & Bransford, J.D. (1987). Macro-contexts for learning: Initial findings and issues. *Journal of Applied cognition, I,* 93-108.

Sherwood, R.D., Petrosino, A.J., Lin, X., Lamon, M., & the CTGV. (1995) Problem based macro context in science instruction: Theoretical basis, design issues, and the development of applications. In D. Lavoie (Ed.), *Towards a cognitive science perspective for scientific problem solving* (pp.191-14). Manhattan, KS: National Association for Research in Science Teaching.

Shih, Y. (1997). Effect of knowledge with anchored instruction on learning transfer. In *proceedings of selected research and development presentation at the 19th Annual National Convention of the Association for Education Communication and Technology* (Albuquerque NM, February 14-18). Retrieved from ERIC Database (ED409877).

Simon, H. A. (1980). Problem solving and education. In D.T. Tuma and R. Reif (Eds.), *Problem Solving and Education: Issues in Teaching and Research* (pp 81-96). Hillsdale, NJ: Eribaum.

Smith-Israel, S. (2009). *Creative therapy and adolescents: emotion regulation and recognition in a psycho-educational group for 9th grade students* (Dissertation). Retrieved from http://digitalcommons.providence.edu/cgi/viewcontent.cgi?article=socialwrk_students

Snow, R.E., & Mandinach, E.B. (1991). Integrating assessment and instruction: A research and development agenda. *Research Report RR*-99-8. Princeton, NJ: ETS.

Soraci, S.A., Jr., Franks, J.J., Bransford, J.D., Chechile, R.A., Belli, R.F., Carr, F., & Carlin, M.T. (1994). Incongruous item generation effects: A multiple-cue perspective. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 20*, 1-12.

Spiro, R., Feltovich, P., Jacobson, M., & Coulson, R. (1991). Cognitive flexibility, constructivism, and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. *Educational Technology, 31* (5), 24-33.

Spiro, R.J., & Jheng, J.C. (1990). Cognitive flexibility and hypertext: Theory and technology for the nonlinear and multidimensional traversal of complex subject matter. In D. Nix and R.J. Spiro (Eds.), *Cognition, education and multimedia: Exploring ideas in high technology* (p.163-205). Lawrence Erlbaum Associates, Inc.

Suryanti, I. (2018). Process skills approach to develop primary students' scientific literacy: A case study with low achieving students on water cycle. *Journal of Physics Conference Series: Materials Science and Engineering,* 296.

Suveg, C., Morelen, D., Brewer, G.A., and Thomassin, K. (2010). The emotion dyregulation model of anxiety: A preliminary path analytic examination. *Journal of Anxiety Disorders, 24*,924-930.

Swanger, E. (2012). Anchored instruction research paper to fulfil the requirements for adult learning theories class at Penn State University. *TRDEU 520 Learning Styles and learning theory in Training Anchored Instruction*.

Sweller, J. (1999). *Instructional design in technical areas*. Melbourne: ACER Press.

Taylor, L. (2004). Consideration of choosing an English-English dictionary for ESL students. *Int. TESL. J., 10* (7), 33-35.

Thompson, R.A. (1994). Emotion regulation: A theme in search of definition. In N.A. Fox (Ed.), The Development of Emotion Regulation: Biological and Behavioural Considerations. *Monographs of the Society for Research on Child Development, 59*, 25-52.

Thompson. (1990). Emotion & self regulation. In R.A. Thompson (Ed.), *Socio emotional development: Nebraska symposium on motivation* (vol.36, pp.367-467). Lincoln: University of Nebraska Press.

Tobin, K.G., & William Capie. (1982). Relationships between classroom process variables and middle-school science achievement. *Journal of Educational Psychology, 74*(3), 441.

Trogolo, M., & Medrano, L.A. (2012). Personality traits, difficulties in emotion regulation and academic satisfaction in a sample of argentine college students. *International Journal of Psychological Research, 5*(2) pp.30-39.

Tungus, S. (2016). In the eye of the beholder's emotional labour in academia varies with leniere and gender. *Studies in Higher Education, 41* (1).

Upshur, E.D. (2010). *Effect of maladaptive family functioning on child emotion regulation: A study among children and mothers who have experienced domestic violence* (Doctoral Dissertation). Retrieved from ProQuestDissertaion and Theses database. (UMI 3426887).

VanHaneghan, J., Barron. L., Young, M., Williams, S., Vye, N., & Bransford, J. (1992). The jasper series: An experiment with new ways to enhance mathematical thinking. In D.F. Halpern (Ed.), *Enhancing thinking skills in the science and mathematics.* Hillsdale, NJ: Eribaum.

Volet, S., Seghessl, C., & Ritchie, S. (2019). Positive emotions in students – led collaborative science activities: Relating types and Sources of emotions to engagement in learning. *Studies in Higher Education, 44* (10), 1734-1746.

Voss, J.F. (1986). Social studies. In R.F. Dillion and R.J. Stemberg (Eds.) *Cognition and instruction* (pp 205-239). Orlando, FL: Academic Press.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological process.* M.Cob. V. John. Steiner, S. Scribuner. E. Souberman (Eds.), Cambridge, MA: Harvard University Press.

Whitehead, A.N. (1929). *The aim of education and other essays.* New York: MacMillan.

Williams, S.M. (2002). Anchored collaborative inquiry. *Information Technology & Teacher Education Annual-2002* (pp. 324-325). Norfolk, VA: Association for the Advancement of Computing in Education.

Winn, W. (1993). Instructional design and situated learning: Paradox or partnership? *Educational Technology, 41*(1), 16-20.

Yadav, P., & Iqbal, N. (2009). Impact of life skill training on self-esteem, adjustment and empathy among adolescents. *Journal of the Indian Academy of Applied Psychology*.

Yalin, H.I. (1999). *Ogretim teknolojilerive materyal gelistirme*. Ankara: Nobel Yayin Dagiyim, 216-219

Yamtinah, S., Msykuri, M., Ashadi., & Shidiq, A.S. (2017). Analysis of students process skills in hydrolysis subject. Matte using test let instrument advances social science. *Education and Humanities Research (ASSEHR), 58*.

Yazici, U.K., & Yazici, P.I. (2019). Decreased theory of mind skill increased emotional dysregulation and insight levels in adolescents diagnosed with OCD. *Nordic Journal of Psychiatry, 73*(7)1-8.

Young, M.F., & Kulikowich, J.M. (1992). *Facilitating reading comprehension through mathematical problem solving in a complex context*.

Zhang, M.C. (2001). Dangdai zhongguo renshilum yanjiu: Huigu yu qianzhan. Research in contemporary Chinese epistemology: Review and outlook. *Teaching and Research, 8,* 59-63.

Zioglu, B.F. (2009). An investigation of the relationship between science process skills with efficient laboratory use and science achievement in chemistry education. *Journal of Turkish Science Education, 6*.

APPENDICES

Appendix XVIII

STANDARD PROGRESSIVE MATRICES
SETS A, B, C, D & E

SCORING KEY

SET A		SET B		SET C		SET D		SET E	
Sl. No	Answer	Sl. No	Answer	Sl. No	Answer	Sl. No	Answer	Sl. No	Answer
1	4	1	2	1	8	1	3	1	7
2	5	2	6	2	2	2	4	2	6
3	1	3	1	3	3	3	3	3	8
4	2	4	2	4	8	4	7	4	2
5	6	5	1	5	7	5	8	5	1
6	3	6	3	6	4	6	6	6	5
7	6	7	5	7	5	7	5	7	1
8	2	8	6	8	1	8	4	8	6
9	1	9	4	9	7	9	1	9	3
10	3	10	3	10	6	10	2	10	2
11	4	11	4	11	1	11	5	11	4
12	5	12	5	12	2	12	6	12	5

Appendix XVII

STANDARD PROGRESSIVE MATRICES
SETS A, B, C, D & E

RESPONSE SHEET

Name:.....Ref. No.....

Place:.....Date.....

Age.....Birth Day.....

Test begun.....Test ended.....

A		B		C		D		E	
1		1		1		1		1	
2		2		2		2		2	
3		3		3		3		3	
4		4		4		4		4	
5		5		5		5		5	
6		6		6		6		6	
7		7		7		7		7	
8		8		8		8		8	
9		9		9		9		9	
10		10		10		10		10	
11		11		11		11		11	
12		12		12		12		12	

Time	Total	Grade

Appendix XVI

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

SOCIO ECONOMIC STATUS SCALE

നിർദ്ദേശങ്ങൾ:

താഴെ പറയുന്നവ ശ്രദ്ധാപൂർവ്വം വായിച്ച് വിശദാംശങ്ങൾ എഴുതുക. ഉത്തരങ്ങൾ കൊടുത്തിട്ടുള്ളിടത്ത് ശരിയായ ഉത്തരത്തിനെതിരെ ശരി അടയാളം ഇടുക.

1. പേര്:.....

2. ആൺകുട്ടി/പെൺകുട്ടി..... 3. വയസ്സ്:.....

4. സ്കൂൾ/സ്ഥാപനം.....

5. തിയ്യതി:.....

6. കുടുംബാംഗങ്ങളെകുറിച്ചുള്ള വിവരം താഴെ [1] മുതൽ [9] വരെയുള്ള കോളങ്ങളിൽ സൂചിപ്പിക്കാവുന്നതാണ്. അതിൽ ആവശ്യമുള്ള കോളത്തിൽ ശരി [✓] അടയാളപ്പെടുത്തുക.

അംഗങ്ങൾ	അക്ഷരാഭ്യാസം ഇല്ല.	Std. I to IV	Std. V to VII	Std VIII to X	Pre University, Pre-Degree T.T.C. Intermediate	BA, B.Sc., B..Com., B.Ed., NTTC, Eng. Diploma	MA, MSc, M.Ed., BL, B.Sc(Tech), Ph.D. etc.	ജോലിയുണ്ടെങ്കിൽ ജോലിയുടെ പേര്	പ്രതിമാസ വരുമാനം
	1	2	3	4	5	6	7	8	9
പിതാവ് (രക്ഷാകർത്താവ്)									
മാതാവ്									

Appendix XV

CLASSROOM ENVIRONMENTAL INVENTORY

RESPONSE SHEET

SL. No	YES	NO
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

SL. No	YES	NO
25		
26		
27		
28		
29		
30		
31		
32		
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34		
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37		
38		
39		
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47		

Appendix XIV

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

CLASSROOM ENVIRONMENT INVENTORY

(Secondary Level)

Dr. P.K. Aruna
Lecturer in Education

Sureshan, K.
Unnikrishnan, M.
M.Ed. Students

Instructions

The following statements given below are related with your classroom learning. Two responses are given for each statement (Yes/No). Separate answer sheet is provided. Read each statement carefully and mark your response in the answer sheet by putting 'X' in the relevant circle.

1. Adequate number of benches, desks, tables and chairs are provided in the classroom.
2. Teacher changes the place where the students sit.
3. There is enough space in our classroom for hanging charts, maps and pictures.
4. Students can see the charts, pictures and maps fixed in the classroom.
5. There is adequate space and facilities in the classroom to study by conducting experiments.
6. There is a bulletin board in our class.
7. Teacher encourages to publish a manuscript magazine with maximum participation of the students.
8. Teacher talks with each student in the class.
9. Class starts and ends in the right time.
10. Students are told how to behave in the classroom.
11. Teacher gives advices or punishments to students who are not obedient in the class.
12. We feel angry and sadness while teacher punishes.
13. Teacher takes personal interest to know each student in the class.
14. Conduct art and sport competition or quiz competitions by making students in different group.
15. Teacher appreciates the group or student who win the competition.
16. Art club and science club are formed and working in our class.
17. Teacher encourages the student to participate in club activities.
18. Students help each other in their studies.
19. Students are friendly in our class.

20. Some students make problem in our class.
21. Conduct discussion in the class about the importance of place visited during study tour.
22. Students show competition in the field of their study.
23. Students feel difficulty in completing in some academic matters.
24. Teacher trains the students to prepare and handle teaching aids.
25. Teacher trains the students to do their workbook and other exercises without mistakes.
26. Teacher help the students to prepare themselves for quiz competition and general knowledge test etc.
27. Teacher makes discussions on new inventions and current affairs.
28. Students express their opinions in their classroom discussions.
29. Teacher encourages the students to participate in the classroom discussions.
30. Teacher trains the students in writing essays related to new inventions and current affairs.
31. Teacher trains the students in writing essays related to their study tour program.
32. Teacher gives consideration to the opinion of the students.
33. Teacher encourages the self-study method of the students.
34. Teacher takes his class in way that all students can clearly hear and understand.
35. Teacher encourages the students to say the answers.
36. Teacher uses charts, maps, models and other teaching aids suitable for the lesson.
37. Students have doubts related to their subjects.
38. Teacher clears the doubts of the students on their lesson.
39. Teacher writes on the blackboard clearly and systematically.
40. Teacher trains the students to make teaching aids using cheap and waste materials.
41. Teacher encourages the students to observe the nature.
42. Teacher makes awareness about the importance of environmental cleanliness and protection of nature.
43. Teacher inspire the students to participate in 'Vijnanothsava+' and other public examinations.
44. Teacher tells the reference books useful for getting more knowledge about the subject studied.
45. Teacher gives inspiration to the students for joining voluntary organizations like scouts and guides.
46. Teacher helps the students to learn computer.
47. Teacher encourages the students to learn with the help of new technology.

Appendix XIII

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

CLASSROOM ENVIRONMENT INVENTORY

(Secondary Level)

Mrs. ARUNA. P.K
Lecturer in Education

Sureshan. K
Unnikrishnan. M
(M.Ed. Students)

നിർദ്ദേശങ്ങൾ

താഴെ കൊടുത്തിരിക്കുന്ന പ്രസ്താവനകൾ ക്ലാസ്മുറിയിലെ പഠനവുമായി ബന്ധപ്പെട്ടവയാണ്. ഓരോ പ്രസ്താവകൾക്കും രണ്ടുവീതം പ്രതികരണങ്ങൾ കൊടുത്തിരിക്കുന്നു. ഉണ്ട്/ഇല്ല (അതെ/അല്ല). ഉത്തരക്കടലാസ്സുകൾ പ്രത്യേകം തന്നിട്ടുണ്ട്. പ്രസ്തവകൾ വായിച്ച് ഉത്തരക്കടലാസ്സിലെ അതേ നമ്പറിന് നേരെ യുള്ള ഉചിതമായ ഏതെങ്കിലും ഒരു പ്രതികണത്തിലുള്ള വൃത്തത്തിൽ 'ഃ' ചിഹ്നം രേഖപ്പെടുത്തുക.

1. ക്ലാസ്മുറിയിൽ ആവശ്യത്തിനുള്ള ബഞ്ച്, ഡസ്ക്, മേശ, കസേര എന്നിവ ഉണ്ട്.
2. ക്ലാസിൽ കുട്ടികളുടെ ഇരിപ്പിടം അധ്യാപകൻ ഇടയ്ക്കിടെ മാറ്റാറുണ്ട്.
3. ചാർട്ടുകളും മാപ്പുകളും, ചിത്രങ്ങളും തൂക്കിയിടുവാൻ ക്ലാസിൽ സൗകര്യമുണ്ട്.
4. ചാർട്ടുകളും മാപ്പുകളും ചിത്രങ്ങളും തൂക്കിയിട്ടാൽ അവ എല്ലാ കുട്ടികൾക്കും ഒരുപോലെ കാണുവാൻ സാധിക്കുന്നു.
5. ക്ലാസ്മുറിക്ക് പരീക്ഷണങ്ങൾ ചെയ്ത് പഠിക്കുവാനുള്ള വലിപ്പവും സൗകര്യവു മുണ്ട്.
6. ക്ലാസിലെ കുട്ടികൾക്ക് ഒരു ബുള്ളറ്റിൻ ബോർഡുണ്ട്.
7. പരമാവധി കുട്ടികളുടെ പങ്കാളിത്തം ഉറപ്പുവരുത്തിക്കൊണ്ട് ക്ലാസിൽ നിന്ന് ഒരു കൈയെഴുത്ത് മാസിക പ്രസിദ്ധീകരിക്കാൻ അധ്യാപകൻ പ്രോത്സാഹിപ്പിക്കാറു ണ്ട്.
8. അധ്യാപകൻ ക്ലാസ്സിൽ എല്ലാവരോടും സംസാരിക്കാറുണ്ട്.
9. ക്ലാസിൽ കൃത്യസമയത്ത് പഠനം തുടങ്ങുകയും അവസാനിക്കുകയും ചെയ്യാറുണ്ട്.
10. ക്ലാസിലെ പെരുമാറ്റ രീതിയെക്കുറിച്ച് അധ്യാപകൻ പറഞ്ഞുതരാറുണ്ട്.
11. ക്ലാസിൽ അനുസരണക്കേടു കാണിക്കുന്ന കുട്ടികളെ അധ്യാപകൻ ഉപദേശിക്കു കയും ശിക്ഷിക്കുകയും ചെയ്യാറുണ്ട്.
12. അധ്യാപകൻ ശിക്ഷിക്കുമ്പോൾ ദേഷ്യവും സങ്കടവും തോന്നാറുണ്ട്.
13. അധ്യാപകൻ ക്ലാസിലെ എല്ലാ കുട്ടികളെയും വ്യക്തിപരമായി അറിയാൻ ശ്രമി ക്കാറുണ്ട്.

14. ക്ലാസിലെ കുട്ടികളെ പല ഗ്രൂപ്പുകളായി തിരിച്ച് കലാകായിക മത്സരവും പ്രശ്നോത്തരി മത്സരവും നടത്താറുണ്ട്.
15. മത്സരങ്ങളിൽ വിജയിക്കുന്ന ഗ്രൂപ്പിനെയും കുട്ടികളെയും അധ്യാപകൻ അഭിനന്ദിക്കാറുണ്ട്.
16. ക്ലാസിൽ ആർട്സ് ക്ലബ്ബുകൾ, പഠന ക്ലബ്ബുകൾ എന്നിവ സംഘടിപ്പിച്ച് പ്രവർത്തിക്കാറുണ്ട്.
17. ക്ലാസിലെ ക്ലബ്ബുകളിലും മത്സരങ്ങളിലും പരമാവധി കുട്ടികളെ പങ്കെടുപ്പിക്കാൻ അധ്യാപകൻ ശ്രമിക്കാറുണ്ട്.
18. പഠനകാര്യങ്ങളിൽ കുട്ടികൾ പരസ്പരം സഹായിക്കാറുണ്ട്.
19. ക്ലാസിൽ ചില കുട്ടികൾ പരസ്പരം സ്നേഹത്തോടു കൂടി കഴിയാറുണ്ട്.
20. ചില കുട്ടികൾ ക്ലാസിൽ പ്രശ്നങ്ങളുണ്ടാക്കാറുണ്ട്.
21. പഠനയാത്രയ്ക്ക് പോയ സ്ഥലങ്ങളെക്കുറിച്ചും അവയുടെ പ്രാധാന്യത്തെക്കുറിച്ചും ക്ലാസിൽ ചർച്ചകൾ നടത്താറുണ്ട്.
22. കുട്ടികൾ പഠനകാര്യങ്ങളിൽ മത്സരബുദ്ധി പ്രകടിപ്പിക്കാറുണ്ട്.
23. പഠനകാര്യങ്ങൾ ചെയ്തു തീർക്കുന്നതിന് വളരെ പ്രയാസം തോന്നാറുണ്ട്.
24. പഠന ഉകരണങ്ങൾ തയ്യാറാക്കുന്നതിനും കൈകാര്യം ചെയ്യുന്നതിനും അധ്യാപകൻ പരിശീലിപ്പിക്കാറുണ്ട്.
25. വർക്ക് ബുക്കുകൾ, പാഠാഭ്യാസം എന്നിവ കുട്ടിഖൽ തെറ്റു കൂടാതെ ചെയ്യുവാൻ അധ്യാപകൻ പരിശീലിപ്പിക്കാറുണ്ട്.
26. പ്രശ്നോത്തരി മത്സരം, പൊതു വിജ്ഞാനപരീക്ഷ തുടങ്ങിയവയ്ക്കുവേണ്ടി തയ്യാറെടുക്കുവാൻ അധ്യാപകൻ കുട്ടികളെ സഹായിക്കാറുണ്ട്.
27. പുതിയ കണ്ടുപിടുത്തങ്ങളെക്കുറിച്ചും കാലിക പ്രാധാന്യമുള്ള വിഷയങ്ങളെക്കുറിച്ചും ക്ലാസിൽ ചർച്ച ചെയ്യാറുണ്ട്.
28. ക്ലാസിൽ നടക്കുന്ന ചർച്ചകളിൽ കുട്ടികൾ അവരുടെ അഭിപ്രായം തുറന്നു പറയാറുണ്ട്.
29. ക്ലാസ് ചർച്ചകളിൽ അഭിപ്രായം പറയാൻ കുട്ടികളെ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
30. പുതിയ കണ്ടുപിടുത്തങ്ങളെകുറിച്ചും കാലിക പ്രാധാന്യമുള്ള വിഷയങ്ങളെക്കുറിച്ചും ഉപന്യാസം തയ്യാറാക്കാൻ പരിശീലിപ്പിക്കാറുണ്ട്.
31. പഠനയാത്രകളെക്കുറിച്ചും അവയുടെ പ്രാധാന്യത്തെക്കുറിച്ചും ലേഖനമെഴുതുവാൻ അധ്യാപകൻ പരിശീലിപ്പിക്കാറുണ്ട്.
32. കുട്ടികളുടെ അഭിപ്രായങ്ങൾക്ക് അധ്യാപകൻ പരിഗണന നല്കാറുണ്ട്.
33. കുട്ടികളുടെ സ്വയം പഠനരീതിയെ അധ്യാപകൻ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
34. അധ്യാപകൻ ക്ലാസ് എല്ലാവർക്കും കേൾക്കത്തവിധത്തിലും മനസ്സിലാകത്തക്കവിധത്തിലുമാണ് എടുക്കാറുള്ളത്.
35. അധ്യാപകൻ കുട്ടികളെ ഉത്തരം പറയുവാൻ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
36. പഠനഭാഗങ്ങൾക്കനുസരിച്ച് അധ്യാപകൻ ചാർട്ടുകളും മോഡലുകളും മാപ്പുകളും മറ്റു പഠനോപകരണങ്ങളും ഉപയോഗിക്കാറുണ്ട്.
37. കുട്ടികൾ പാഠഭാഗത്തെ സംബന്ധിച്ച് സംശയങ്ങൾ അധ്യാപകനോട് ചോദിക്കാറുണ്ട്.

38. അധ്യാപകൻ പാഠഭാഗത്തെ സംബന്ധിച്ച കുട്ടികളുടെ സംശയങ്ങൾ തീർത്തു കൊടുക്കാറുണ്ട്.
39. അധ്യാപകൻ ബോർഡിൽ വ്യക്തമായും അടുക്കോടുകൂടിയും എഴുതാറുണ്ട്.
40. ചെലവു കുറഞ്ഞ വസ്തുക്കളും പാഴ്വസ്തുക്കളും ഉപയോഗിച്ച് പഠനോപകരണങ്ങൾ നിർമ്മിക്കുന്നതിന് അധ്യാപകൻ പരിശീലനം നല്കാറുണ്ട്.
41. അധ്യാപകൻ പ്രകൃതി നിരീക്ഷണത്തിന് പ്രചോദനം നൽകാറുണ്ട്.
42. പരിസര ശുചീകരണത്തെക്കുറിച്ചും പ്രകൃതി സംരക്ഷണത്തെക്കുറിച്ചും അധ്യാപകൻ ബോധവൽക്കരണം നടത്താറുണ്ട്.
43. വിജ്ഞാനോത്സവങ്ങളിലും പൊതു പരീക്ഷകളിലും പങ്കെടുക്കുന്നതിന് അധ്യാപകൻ പ്രചോദനം നൽകാറുണ്ട്.
44. പാഠ്യവിഷയത്തിൽ കൂടുതൽ അറിവുനേടാൻ വേണ്ട പുസ്തകങ്ങളും മറ്റു പുസ്തകങ്ങളും അധ്യാപകൻ പറഞ്ഞു തരാറുണ്ട്.
45. സ്കൗട്ട്, ഗൈഡ് എന്നീ സന്നദ്ധസംഘടനകളിൽ പ്രവർത്തിക്കാൻ പ്രചോദനം നല്കാറുണ്ട്.
46. കമ്പ്യൂട്ടർ പരിശീലിക്കാൻ അധ്യാപകൻ സഹായിക്കാറുണ്ട്.
47. പുതിയ സാങ്കേതികവിദ്യയുടെ സഹായത്തോടെ പഠനം നടത്താൻ അധ്യാപകൻ സഹായിക്കാറുണ്ട്.

Appendix XII

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

LESSON TRANSCRIPT ON EXISTING METHOD OF TEACHING

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

Name of Teacher	:	Muhammed Haris. C		
Name of School	:	G.V.H.S.S. Kunnakkavu	Class	: VIII
Subject	:	Social Science	Division	: A
Unit	:	Map Reading	Duration	: 40 mts.
Topic	:	Importance of Map	Strength	: 45

Lesson Transcript I

Learning Objectives in terms of Content : To understand the importance of maps
To identify different location and routs on map
To get familiar with the different directions
Find shortest route on the map

Learning Objectives in Terms of Process Skills in Social Science

Observe, Locate, interpret, Predict, Classify, Synthesize, Measure, Evaluate

Learning Out come interm of Emotional Regulation

Positive re appraisal, re focus on planning

Learning Materials

1. Different types of map
2. Chart which is showing wonderland

Previous Knowledge

Teacher expected about the students knowledge that there are different places in the world. Knowing direction has importance in life.

Learning Process	Responses
Introduction: Teacher enters the class and greets the students. Teacher explains an event to the students as follows "The Chinese Embassy at Belgrade in Yugoslavia was destroyed in an air bombing on 7th may 1999. Three embassy officials were killed and twenty injured. China vehemently commend the NATO air strike. Following this, the NATO military chiefs expressed regret on their error. The mission had misfired as they were using a map that had not been updated. It was said in the apology that they where unaware of the Chinese embassy function in where unaware of the Chinese embassy functioning where the Belgrade military station used to be. Teacher: ask some questions regarding above incident and important of maps St: proper use of maps are very important to reach at proper destination and complete exact mission without fail. Teacher repeated that map reading skill is important and it needs certain knowledge and skills regarding map. So first we look on how map reading is possible. **Developmental Activity** **Activity I** Teacher shows some maps and ask to find different symbols. Depicts in the maps. Teacher divided the students into different groups. Teacher makes the students into different groups. Gives five minutes for discussion. . **Discussion Points** Explain the task as find different symbols and lines that contain in maps. Teacher explains examples of symbols such as road, railway line, institutions, and directions so on. Find each symbols and write about its meaning.	Students Actively Discuss and Prepare notes

Learning Process	Responses
Inference to be reached Students find different symbols of the maps and explains its meaning.	Each group Explains their answers
Activity II Teacher shows chart of wonderland. It includes various destinations and different routes. Teacher gives 5 minutes for discussion and ask different questions	Students observe and actively Participate in discussion
Discussion Points Find out various routes from the given maps and find different Location of various institutions with the help of directions and symbols Find out the shortest rout of the maps.	
Inference to be reached Students prepare and present different location of various institutions and different possible routes. Students also find out the shortest route of wonderland among the route	
Concluding Activities A map is a symbolic depiction emphasizing relationship between elements of some space, such as objects, regions or themes. There are different types of maps according to its purpose and use. Map contains colours, signs and symbols. Map reading is very important to find routes and destination. Map reading requires a good knowledge of its scale, directions, colour and the signs and symbols used in them.	
Follow up Activities Make a map of your locality which includes your school and home and also find different routes to yours school from home including shortest route.	

Lesson Transcript II

Name of Teacher	:	Muhammed Haris. C		
Name of School	:	G.V.H.S.S. Kunnakkavu	Class	: VIII
Subject	:	Social Science	Division	: A
Unit	:	From Food Gathering to Food Production	Duration	: 40 mts.
Topic	:	Invention of wheel	Strength	: 45

Learning Objectives in terms of Content :

To identify different incidents leading to the invention of wheel

To get familiarity with the difference between the life before and after the invention of wheel

Identify major changes happened due to invention of wheel

Find out different causes that leading to the inventions of wheel

Learning Objectives in Terms of Process Skills in Social Science

To Observe the materials regarding wheel and out comes expressed in terms of behaviours such as classify, predict, synthesise, interpret evaluate,

Learning Outcome in term of Emotional Regulation

To involve in different activities regarding the topic and develop Positive re appraisal, Positive refocusing, re focus on planning

To make positive changes in Self Blame, Rumination, Catastrophizing and develop attitude of acceptance through cooperative learning.

Learning Materials

1. Photographs related to invention of the wheel
2. Picture charts of various vehicles having different kind of wheels
3. Expected Product

4. Discussion note regarding various possibilities of the invention of wheel and differentiates the nature of vehicle and its wheel

Previous Knowledge

Teacher expected about the students know the difference between earlier man and later. The life styles of man is changed gradually. Some of the inventions helps the human beings for development.

Learning Process	Assessment
Introduction : Teacher enters the class and greet the students. Teacher asks to different answers students that where are you coming from dear students. Students responded different place.	
Tr : How far your place	
St : Different replayed different distances	
Tr : How you reached to school	
St : By using different vehicles such as Bus, Autoriksha, Bike, Jeep so on	
Tr : Teacher repeated these vehicles name and asks to students that what is common in these vehicles	
St : Students are replayed driver, wheel, engine, steering so on.	
Tr : Select one of the answers of the students that is wheel and explained that every vehicle in the road we can see different types of wheel. Are you interested to know how the wheel invented. Students express their interest. Teacher enter to the first activity.	
Developmental Activity	
Activity I	
Teacher explains some incidents by using some chart of earlier man and their hunting and life style. and ask the students to explain how it leads to invention of wheel. Students starts to	

Learning Process	Assessment
hypothesize their answers. Teacher make the students into different groups. Gives five minutes for discussion.	
Discussion Points Explain the task as find out possible ways of incidents which leads to invention of wheel and major expected changes in their life styles after the invention. Students discuss the matter with the support of teacher hanged chart. Through group discussion teacher prompt the students to prepare new hypothesis.	Students Actively Engaged in group discussion
Inference to be reached Students explains different possibilities that may leads to the invention of wheel. Students find major changes of peoples life style after invention of the wheel	Each group Explains their Answers
Activity II Teacher shows pictures of different photo graphs of various vehicles. Teacher write some questions regarding pictures in the Black Board. Provide 5 minutes for discussion and prepare write up of the features of the wheels of each vehicle.	Students observe and actively Participate in discussion
Discussion Points Which are the peculiar feature of different wheels. Classify and compare on the basis of its peculiarity such as its size, strength and number of wheels so on .	
Inference to be reached Students prepare and present peculiar features of the wheel based on its size, number and strength. Students compare different wheels based on its peculiar characteristic features.	

Learning Process	Assessment
Concluding Activities The invention of the wheel revolutionized transport and industry. Use of wheel leads to the manufacturing of clay pots. Wheel invented by accidental incidents and conscious thinking. But it energies in the development of humanity. Teacher consolidated the findings of the two activities by explaining different hypothesis of students regarding the invention of the wheel and changes of humanity. Teacher repeated the findings of second activity that the classification of different wheels of vehicle based on its features. **Follow up Activities** Find out the message of wheel to humanity in the contemporary world situation.	

Appendix XI

DEPARTMENT OF EDUCATION
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LESSON TRANSCRIPT ON EXISTING METHOD OF TEACHING

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Name of Teacher	:	Muhammed Haris. C		
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Topic	:	Importance of Map	Strength	: 45

Lesson Transcript I

ഉള്ളടക്കത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേശങ്ങൾ	:	1) ഭൂപടത്തിലെ വ്യത്യസ്ഥ സ്ഥലങ്ങൾ തിരിച്ചറിയുന്നതിന്. 2) വ്യത്യസ്ഥ ദിശകളെ കൂടുതൽ അടുത്തറിയുന്നതിന് (തെക്ക്, വടക്ക്, കിഴക്ക്, പടിഞ്ഞാറ്) 3) ഭൂപടത്തിലുള്ള വ്യത്യസ്ഥ വഴികൾ തിരിച്ചറിയുന്നതിന് 4) ഭൂപടത്തിലുള്ള ഏറ്റവും ചെറിയ വഴി കണ്ടെത്തുന്നതിന്
പ്രക്രിയാ ശേഷികളു ടെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേങ്ങൾ	:	നിരീക്ഷണം, സ്ഥാനനിർണ്ണയം, വ്യാഖ്യാനം, പ്രവചനം, വർഗീകരണം, ഉത്ഗ്രഥനം, അളവ്, അവലോകനം, വിലയിരുത്തൽ.
വൈകാരിക നിയന്ത്രണത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠന ഉദ്ദേശങ്ങൾ	:	സ്വയം കുറ്റപ്പെടുത്തലും മറ്റുള്ളവരെ കുറ്റപ്പെടുത്തലും കുറയ്ക്കൽ അംഗീകരിക്കൽ. സംശയാതീതമായി വീണ്ടും ശ്രദ്ധ കേന്ദ്രീകരിക്കുക. ആസൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കുക സംശയാതീതമായി പുനർമൂല്യനിർണയം നടത്തുക, പുതിയ കാഴ്ചപ്പാടിലേക്ക് നയിക്കൽ.
പഠന സാമഗ്രികൾ	:	വ്യത്യസ്ഥ തരം ഭൂപടങ്ങൾ അത്ഭുത ദ്വീപിന്റെ ചാർട്ട്

മുന്നറിവ്	:	ലോകത്ത് പല പ്രദേശങ്ങലും ഉണ്ടെന്നുള്ള അറിവും, ദിശകൾ അറിഞ്ഞിരിക്കണ്ടത് ജീവിതത്തിൽ വളരെ പ്രധാനപ്പെട്ടതാണെന്നും കുട്ടികൾക്കറിയാം.

പഠനപ്രവർത്തനങ്ങൾ	പ്രതികരണങ്ങൾ

ആമുഖം: പ്രസന്നവദനനായി ക്ലാസിൽ എത്തുന്ന അധ്യാപക രൻ കുട്ടികളെ അഭിവാദ്യം ചെയ്യുന്നു. ശേഷം താഴെ പറയും വിധം ഒരു സംഭവം വിവരിക്കുന്നു.

യൂഗോസ്ലാവ്യായിലെ ബെൻഗ്രേഡിലുള്ള ചൈനീസ് എംബസി നാറ്റോ സഖ്യം മേയ് 7, 1999ൽ ബോംബിട്ട് തക ർത്തു. എംബസിയിലെ 3 ജീവനക്കാർ മരിക്കുകയും 20-ഓളം പേർക്ക് പരിക്ക് ഏൽക്കുകയും ചെയ്തു. ചൈന ശക്തമായ പ്രതിഷേധം രേഖപ്പെടുത്തിയതിന്റെ അടിസ്ഥാനത്തിൽ നാറ്റോ മിലിറ്ററി ചീഫ് അവർക്കുണ്ടായ വീഴ്ചയിൽ ഖേദം പ്രകടിപ്പിച്ചു.

പരിഷ്കരിക്കാത്ത പഴയ ഭൂപടത്തിന്റെ അടിസ്ഥാന ത്തിൽ അവർ മനസ്സിലാക്കിയത് അവിടെ ബൽഗ്രേഡ് മിലിറ്ററി

ഇപ്പോൾ ചൈനീസ് എംബസിയായി പ്രവർത്തിക്കുന്ന പ്രദേശം മുൻപ് ബൽഗ്രേഡ് മിലിട്ടറി സൈനികതാവളം ആയിരുന്നു. പുതിയ മാറ്റം പ്രതിപാദിക്കാതിരുന്ന ഭൂപടത്തിന്റെ അടിസ്ഥാന ത്തിലാണ് ഈ ആക്രമണം നടപ്പിലാക്കിയത്. അതുകൊണ്ട് തന്നെയാണ് അവർക്ക് ഇങ്ങനെയൊരു വീഴ്ചപറ്റിയത്.

മുകളിൽ പ്രതിപാദിച്ച സംഭവവുമായി ബന്ധപ്പെട്ട അധ്യാപകൻ വിദ്യാർത്ഥികളോട് ഭൂപടത്തിന്റെ പ്രാധാന്യത്തെ ക്കുറിച്ച് ചോദിക്കുന്നു. യഥാർത്ഥ സ്ഥലത്ത് എത്തിച്ചേരാനും ഉദ്ദേശിച്ച ദൗത്യം വിജയകരമായി നടപ്പിലാക്കാനും സഹായി ക്കുന്നതിന് ഭൂപടം ആവശ്യമാണ്. വിദ്യാർത്ഥികളുടെ പ്രതികര ണത്തോട് കൂട്ടിച്ചേർത്ത്കൊണ്ട് ഭൂപടത്തെക്കുറിച്ചുള്ള പ്രധാന പ്പെട്ടതാണെന്നും ഇന്നത്തെ ക്ലാസിൽ ഭൂപടം വായനയെക്കുറിച്ച് പ്രതിപാദിക്കാമെന്നും പറഞ്ഞുകൊണ്ട് പഠനപ്രവർത്തനങ്ങളി ലേക്ക് കടക്കുന്നു.

വികസന പ്രവർത്തനങ്ങൾ

പ്രവർത്തനം 1

ടീച്ചർ ചില ഭൂപടങ്ങൾ കാണിച്ച്കൊണ്ട് അതിലുള്ള വ്യത്യസ്ഥ തരം അടയാളം കണ്ടെത്താൻ പറയുന്നു. അധ്യാപ കൻ വിദ്യാർത്ഥികളെ വിവിധ ഗ്രൂപ്പുകളായി തിരിച്ച ശേഷം പ്രവർത്തനത്തിനായി 5 മിനുട്ട് സമയം നൽകുന്നു.

പഠനപ്രവർത്തനങ്ങൾ	പ്രതികരണങ്ങൾ
ചർച്ചാസൂചകങ്ങൾ ഭൂപടത്തിലുള്ള വ്യത്യസ്ഥ അടയാളങ്ങളും രേഖകളും കണ്ടെത്തുവാനും അത് വിശദീകരിക്കുവാനും അധ്യാപകൻ ആവശ്യപ്പെടുന്നു. ശേഷം അവർ ചെയ്യേണ്ട പ്രവർത്തനത്തെ ഒന്നുകൂടി വ്യക്തമാക്കുന്നതിന് വേണ്ടി റോഡ്, റെയിൽപാളങ്ങൾ, സ്ഥാപനങ്ങൾ, ദിശകൾ തുടങ്ങിയവയുടെ അടയാളങ്ങൾ കാണിച്ച് കൊടുത്തുകൊണ്ട് ടീച്ചർ അത് വിശദീകരിക്കുന്നു. ഇതുപോലെ ഭൂപടത്തിലുള്ള, മറ്റ് അടയാളങ്ങളും അവയുടെ അർത്ഥങ്ങളുമാണ് കുട്ടികൾ കണ്ടെത്തേണ്ടതെന്ന് പറയുന്നു.	കുട്ടികൾ ചർച്ച ചെയ്യുന്നു. കുറിപ്പുകൾ തയ്യാറാക്കുന്നു.
എത്തിച്ചേരേണ്ട നിഗമനങ്ങൾ വിദ്യാർത്ഥികൾ ഭൂപടത്തിലുള്ള വിവിധ അടയാളങ്ങൾ കണ്ടെത്തുകയും അവയുടെ അർത്ഥം വിശദമാക്കുകയും ചെയ്യുന്നു.	ഓരോ ഗ്രൂപ്പും അവരുടെ ഉത്തരങ്ങൾ വിശദീകരിക്കുന്നു.
പ്രവർത്തനം 2 വ്യത്യസ്ഥ സ്ഥലങ്ങളും വഴികളും ഉൾക്കൊള്ളുന്ന അത്ഭുത ദ്വീപിന്റെ ചാർട്ട് കാണിക്കുന്നു. അധ്യാപകൻ 5 മിനുട്ട് സമയം അനുവദിക്കുകയും അനുബന്ധ ചോദ്യങ്ങൾ ചോദിക്കുകയും ചെയ്യുന്നു.	കുട്ടികൾ ചർച്ച ചെയ്യുന്നു. കുറിപ്പുകൾ തയ്യാറാക്കുന്നു.
ചർച്ചാ സൂചകങ്ങൾ ഭൂപടത്തിലുള്ള വിവിധ പ്രദേശങ്ങളും സ്ഥാപനങ്ങളും വഴികളും അതിൽ ഉൾക്കൊള്ളുന്ന അടയാളങ്ങളുടെയും ദിശാസൂചകങ്ങളുടെയും സഹായത്തോടെ കണ്ടെത്തുക. കൂടാതെ ഭൂപടത്തിലെ ഏറ്റവും ദൈർഘ്യം കുറഞ്ഞ വഴിയും കണ്ടെത്തുക.	
എത്തിച്ചേരേണ്ട നിഗമനങ്ങൾ ഭൂപടത്തിലെ വിവിധ പ്രദേശങ്ങളും സ്ഥാപനങ്ങളും വഴികളും കണ്ടെത്തുകയും വിശദീകരിക്കുകയും ചെയ്യുന്നു. വിദ്യാർത്ഥികൾ അത്ഭുതദ്വീപിലെ വിവിധ വഴികളിൽ ഏറ്റവും ദൈർഘ്യം കുറഞ്ഞ വഴിയും കണ്ടെത്തുന്നു.	

സമാപന പ്രവർത്തനങ്ങൾ

ചില സ്ഥലങ്ങളുടെയും വസ്തുക്കളുടെയും പ്രദേശങ്ങളുടെയും ബന്ധങ്ങളെ കാണിക്കുന്ന പ്രതീകാത്മക ചിത്രികരണമാണ് ഭൂപടങ്ങൾ. അവയുടെ ഉദ്ദേശങ്ങൾക്കും ഉപയോഗത്തിനും അനുസരിച്ച് അവയെ വ്യത്യസ്ഥ തരങ്ങളായി തിരിച്ചിട്ടുണ്ട്. ഭൂപടത്തിൽ ഉൾക്കൊണ്ടിട്ടുള്ള പല തരത്തിലുള്ള നിറങ്ങൾ ചിഹ്നങ്ങൾ എന്നിവ ഭൂപടത്തിലെ വഴികളെയും പ്രദേശങ്ങളെയും കണ്ടെത്തുന്നതിന് നമ്മെ സഹായിക്കുന്നു. വിവിധ തരം തോതുകളെക്കുറിച്ചും ദിശകളെക്കുറിച്ചും നിറങ്ങളെക്കുറിച്ചും ചിഹ്നങ്ങലെക്കുറിച്ചും ഉള്ള അറിവ് ഭൂപടവായനശേഷി വികസിപ്പിക്കുന്നതിന് അനിവാര്യമാണ് എന്ന് പറഞ്ഞുകൊണ്ട് അധ്യാപകൻ ക്ലാസ് അവസാനിപ്പിക്കുന്നു. ഈ പാഠാസൂത്രണത്തിൽ മുകളിൽ പ്രതിപാതിച്ച പ്രവർത്തനങ്ങളിലൂടെ വിദ്യാർത്ഥികളിൽ നിരീക്ഷണം, സ്ഥാനനിർണയം, വ്യാഖ്യാനം, പ്രവചനം, വർഗ്ഗീകരണം, ഉത്ഗ്രഥനം, അളവ്, വിലയിരുത്തൽ തുടങ്ങിയ പ്രക്രിയാ ശേഷികളും സ്വയം കുറ്റപ്പെടുത്തലും മറ്റുള്ളവരെ കുറ്റപ്പെടുത്തലും കുറയ്ക്കൽ. സംശയാതീതമായി വീണ്ടും ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ അംഗീകരിക്കൽ ആശൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ, സംശയാതീതമായി പുനർമൂല്യ നിർണയം നടത്തൽ ദാരുണസംഭവമായി ചിത്രീകരിക്കാതിരിക്കൽ, പരിചിന്തനം പുതിയ കാഴ്ചപ്പാടിലേക്ക് നയിക്കൽ തുടങ്ങിയ വൈകാരിക നിയന്ത്രണശേഷികളും വികസിക്കുന്നു.

തുടർ പ്രവർത്തനങ്ങൾ

നിങ്ങളുടെ വീടിന്റെയും സ്കൂളിന്റെയും ഇടയിലുള്ള വിവിധ വഴികളും അവയിൽ ഏറ്റവും ദൈർഘ്യം കുറഞ്ഞ വഴിയും കണ്ടെത്തുക.

Lesson Transcript II

Name of Teacher	:	Muhammed Haris. C		
Name of School	:	G.V.H.S.S. Kunnakkavu	Class	: VIII
Subject	:	Social Science	Division	: A
Unit	:	From Food Gathering to Food Production	Duration	: 40 mts.
Topic	:	Invention of Wheel	Strength	: 45

ഉള്ളടക്കത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേശങ്ങൾ	:	1) ചക്രത്തിന്റെ കണ്ടുപിടിത്തത്തിലേക്ക് നയിച്ച വ്യത്യസ്ഥ സംഭവവികാസങ്ങൾ മനസിലാക്കുന്നതിന് 2) ചക്രത്തിന്റെ കണ്ടുപിടുത്തത്തിന് മുമ്പും ശേഷവുമുള്ള മനുഷ്യജീവിതത്തിന്റെ വ്യാത്യാസത്തെക്കുറിച്ച് അടുത്തറിയുന്നതിന്. 3) ചക്രത്തിന്റെ കണ്ട്പിടുത്തത്തോടെ ഉണ്ടായ പ്രധാനപ്പെട്ട മാറ്റങ്ങൾ തിരിച്ചറിയുന്നതിന്. 4) ചക്രത്തിന്റെ കണ്ടുപിടുത്തവുമായി ബന്ധപ്പെട്ട സ്രോതസ്സുകൾ മനസ്സിലാക്കുന്നതിന്.
പ്രക്രിയാ ശേഷികളുടെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേങ്ങൾ	:	ചക്രത്തെക്കുറിച്ചുള്ള വീഡിയോ നിരീക്ഷിക്കുന്നതിലൂടെ വർഗീകരണം ഉത്ഗ്രഥനം, വിലയിരുത്തൽ, വ്യാഖ്യാനം, പ്രവചനം, തുടങ്ങിയ പ്രക്രിയാ ശേഷികൾ വികസിക്കുന്നതിന്.
വൈകാരിക നിയന്ത്രണത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠന ഉദ്ദേശങ്ങൾ	:	ചക്രത്തെക്കുറിച്ചുള്ള വീഡിയോകൾ നിരീക്ഷിക്കുന്നതിലൂടെ പരിചിന്തനം, ദാരുണസംഭവമായി ചിത്രീകരിക്കാതിരിക്കൽ, സംശയാതീതമായി വീണ്ടും ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ, അംഗീകരിക്കൽ, ആസൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കുക, പുതിയ കാഴ്ച്ചപ്പാടിലേക്ക് നയിക്കൽ, സംശാതീതമായി പുനർമൂല്യ നിർണയം നടത്തുക തുടങ്ങിയ വൈകാരിക നിയന്ത്രണങ്ങൾ ഉണ്ടാകുന്നതിന്.
പഠന സാമഗ്രികൾ	:	ചക്രത്തിന്റെ കണ്ടുപിടുത്തവുമായി ബന്ധപ്പെട്ട ചിത്രങ്ങൾ, വിവിധതരം വാഹനങ്ങളും ചക്രങ്ങളും ഉൾക്കൊള്ളുന്ന ചാർട്ട്.
മുന്നറിവ്	:	പുരാതന മനുഷ്യനും ആധുനികമനുഷ്യനും തമ്മിൽ വ്യത്യാസങ്ങൾ ഉണ്ടെന്നും മനുഷ്യന്റെ ജീവിതത്തിൽ മാറ്റങ്ങൾ വരുത്താൻ ചില കണ്ട്പിടുത്തങ്ങൾ സഹായിച്ചിട്ടുണ്ടെന്നും കുട്ടികൾക്കറിയാം.

പഠനപ്രവർത്തനങ്ങൾ	പ്രതികരണം
കുട്ടികളെ അഭിവാദ്യം ചെയ്തുകൊണ്ട് അധ്യാപകൻ ക്ലാസിൽ പ്രവേശിക്കുന്നു. ശേഷം വിദ്യാർത്ഥികൾ എവിടെനിന്നെല്ലാമാണ് വരുന്നത് എന്ന് ചോദിക്കുന്നു.	
വിദ്യാർത്ഥികൾ : വിവിധ പ്രദേശങ്ങളുടെ പേരുകൾ പറയുന്നു	
അധ്യാപകൻ : നിങ്ങൾ എത്ര അകലെ നിന്നാണ് വരുന്നത്?	
വിദ്യാർത്ഥികൾ : ഓരോരുത്തരും അവരുടെ വീടും സ്കൂളും തമ്മിലുള്ള ദൂരത്തിനനുസരിച്ച് ഉത്തരം പറയുന്നു.	
അധ്യാപകൻ : എങ്ങനെയാണ് നിങ്ങൾ സ്കൂളിൽ എത്തുന്നത്?	
വിദ്യാർത്ഥികൾ : ബസ്സ്, ഓട്ടോറിക്ഷ, ബൈക്ക്, ജീപ്പ്, തുടങ്ങി വിവിധതരം വാഹനങ്ങളുടെ പേരുകൾ പറയുന്നു.	
അധ്യാപകൻ : വിദ്യാർത്ഥികളുടെ ഉത്തരം വീണ്ടും ആവർത്തിച്ച് കൊണ്ട് അവക്ക് പൊതുവിലുള്ളത് എന്താണെന്ന് ചോദിക്കുന്നു.	
വിദ്യാർത്ഥികൾ : ഡ്രൈവർ, എഞ്ചിൻ, സ്റ്റിയറിംഗ്, ചക്രങ്ങൾ, തുടങ്ങിയ ഉത്തരങ്ങൾ പറയുന്നു.	
അധ്യാപകൻ : ചക്രങ്ങൾ എന്ന ഉത്തരം ആവർത്തിച്ച് പറഞ്ഞു കൊണ്ട് എല്ലാത്തരം വാഹനങ്ങൾക്കും അവയ്ക്ക് അനുയോജ്യമായ തരത്തിൽ ചക്രങ്ങൾ ഉണ്ടെന്ന് പറയുന്നു. ഇങ്ങനെയുള്ള ചക്രങ്ങൾ എങ്ങനെയാണ് കണ്ടെത്തിയത് എന്നറിയാൻ നിങ്ങൾക്ക് താല്പര്യമില്ലേ? എന്ന ചോദ്യത്തിന് വിദ്യാർത്ഥികളുടെ പ്രതികരണം കേട്ടതിനുശേഷം പഠനപ്രവർത്തനത്തിലേക്കു കടക്കുന്നു	
വികസനപ്രവർത്തനങ്ങൾ **പ്രവർത്തനം 1** വേട്ടയാടി ജീവിച്ചിരുന്ന പുരാതന മനുഷ്യരുടെ ജീവിതരീതികൾ ഉൾക്കൊള്ളുന്ന ചാർട്ട് കാണിച്ചുകൊണ്ട് അവരുടെ ജീവിതത്തെക്കുറിച്ച് വിശദീകരിക്കുകയും അവർ എങ്ങനെയാണ് ചക്രം കണ്ട്പിടിച്ചത് എന്ന് ചോദിക്കുകയും ചെയ്യുന്നു. പ്രവർത്തനത്തിന് വേണ്ടി വിദ്യാർത്ഥികളെ ഗ്രൂപ്പുകലാക്കി തിരിച്ച് 5 മിനുട്ട് സമയം വിദ്യാർത്ഥിയും അവരുടേതായ നിഗമനങ്ങളിൽ എത്തിച്ചേരാൻ ഉള്ള പ്രവർത്തനങ്ങൾ തുടങ്ങുന്നു.	കുട്ടികൾ ചർച്ച ചെയ്യുന്നു. കുറിപ്പുകൾ തയ്യാറാക്കി കണ്ടെത്തലുകൾ വിശദീകരിക്കുന്നു

പഠനപ്രവർത്തനങ്ങൾ	പ്രതികരണം

ചർച്ചാ സൂചകങ്ങൾ

എന്തെല്ലാം സംഭവവികാസങ്ങളായിരിക്കാം ചക്രങ്ങളുടെ കണ്ടെത്തലിലേക്ക് നയിച്ചതെന്നും ചക്രത്തിന്റെ കണ്ട് പിടുത്തത്തോടെ മനുഷ്യജീവിതത്തിൽ വന്ന മാറ്റങ്ങൾ എന്തെല്ലാമാണെന്നും കണ്ടെത്തി കുറിപ്പ് തയ്യാറാക്കുക. വിദ്യാർത്ഥികൾ അധ്യാപകൻ ക്ലാസിൽ കാണിച്ച ചാർട്ടിനെ നിരീക്ഷിച്ചുകൊണ്ട് ഗ്രൂപ്പു ചർച്ചകളിലൂടെ ഉത്തരത്തിൽ എത്തിച്ചേരാൻ ശ്രമിക്കുന്നു. അധ്യാപകൻ വിദ്യാർത്ഥികൾക്ക് വേണ്ട കൈതാങ്ങ് നൽകികൊണ്ട് നിഗമനങ്ങളിൽ എത്താൻ പ്രോത്സാഹിപ്പിക്കുന്നു.

എത്തിച്ചേരേണ്ട നിഗമനങ്ങൾ

ചക്രത്തിന്റെ കണ്ടെത്തലിലേക്ക് നയിച്ച വിവിധ സംഭവവികാസങ്ങളെക്കുറിച്ച് വിദ്യാർത്ഥികൽ വിശദീകരിക്കുന്നു. ചക്രത്തിന്റെ കണ്ട്പിടുത്തത്തോടെ മനുഷ്യജീവിതത്തിൽ ഉണ്ടായ പ്രധാനപ്പെട്ട മാറ്റങ്ങൾ വിദ്യാർത്ഥികൾ കണ്ടെത്തുന്നു.

പ്രവർത്തനം 2

കുട്ടികൾ ചർച്ച ചെയ്യുന്നു.

അധ്യാപകൻ വിവിധ വാനഹങ്ങളുടെയും ചക്രങ്ങളുടെയും ചിത്രങ്ങൾ കാണിക്കുന്നു. ചിത്രങ്ങളുമായി ബന്ധപ്പെട്ട ചില ചോദ്യങ്ങൾ അധ്യാപകൻ ബോർഡിൽ എഴുതുന്നു. ഓരോ വാഹനത്തിനും അനുയോജ്യമായ ചക്രങ്ങളും അവയുടെ പ്രത്യേകതകളും കണ്ടെത്താൻ '5' മിനുട്ട് സമയം നൽകുന്നു.

കുറിപ്പുകൾ തയ്യാറാക്കി കണ്ടെത്തലുകൾ വിശദീകരിക്കുന്നു

ചർച്ചാ സൂചകങ്ങൾ

ചിത്രത്തിൽ കാണിച്ച ചക്രങ്ങളുടെ പ്രത്യേകതകളെക്കുറിച്ച് അവയുടെ വലിപ്പം, എണ്ണം, ബലം, തുടങ്ങിയ സവിശേഷതകളുടെ അടിസ്ഥാനത്തിൽ കുറിപ്പ് തയ്യാറാക്കുക.

എത്തിച്ചേരേണ്ട നിഗമനങ്ങൾ

വിദ്യാർത്ഥികൾ ചിത്രങ്ങളിലെ ചക്രങ്ങളുടെ സവിശേഷതകൾ അവയുടെ എണ്ണം വലിപ്പം, ബലം, എന്നിവയുടെ അടിസ്ഥാനത്തിൽ വിശദീകരിക്കുന്നു. ഓരോ വാഹനത്തിനും അനുയോജ്യമായ ചക്രങ്ങൾ കണ്ടെത്തുന്നു. വ്യത്യസ്ഥ ചക്രങ്ങളുടെ പ്രത്യേകതകൾ അനുസരിച്ച് അവ തമ്മിലുള്ള വ്യത്യാസങ്ങൾ താരതമ്യം ചെയ്യുന്നു.

സമാപന പ്രവർത്തനങ്ങൾ

അധ്യാപകൻ മുകളിൽ പ്രതിപാതിച്ച രണ്ട് പ്രവർത്തനങ്ങളുടെയും വിദ്യാർത്ഥികളുടെ കണ്ടെത്തലിനെയും സംഗ്രഹിച്ച്കൊണ്ട് ചക്രത്തിന്റെ കണ്ട്പിടുത്തം ഗതാഗത സൗകര്യത്തിന്റെ വികസനത്തിലും വ്യാവസായിക രംഗത്തെ വളർച്ചയിലും വിപ്ലവകരമായ മാറ്റങ്ങൽ ഉണ്ടാക്കി എന്ന് കൂട്ടിച്ചേർക്കുന്നു. മാത്രമല്ല ചക്രങ്ങൾ ഉപയോഗിച്ച് മൺപാത്രനിർമാണവും മനുഷ്യന് തുടങ്ങാൻ സാധിച്ചു. അപ്രതീക്ഷിത സംഭവങ്ങളിലൂടെയും ബോധപൂർവ്വമായ ആലോചനകളിലൂടെയും ചക്രങ്ങൾ ഇന്നത്തെ രൂപത്തിൽ ആയിതീർന്നത് അതു മനുഷ്യന്റെ ജീവിതത്തിൽ അനവധി വികസനങ്ങൾക്ക് ഇടയാക്കി. അധ്യാപകൻ രണ്ടാമത്തെ പ്രവർത്തനങ്ങളുടെ കണ്ടെത്തലുകൾ ക്രോഡീകരിച്ചുകൊണ്ട് ചിത്രത്തിലെ ചക്രങ്ങളും വാഹനങ്ങളും എങ്ങനെയാണ് ബന്ധപ്പെട്ടിരിക്കുന്നതെന്നും ചിത്രത്തിലെ വ്യത്യസ്ഥ ചക്രങ്ങളുടെ പ്രത്യേകതകൾ എന്തൊക്കെയാണെന്നും ഒന്നുകൂടി വിശദീകരിച്ച്കൊണ്ട് പാഠഭാഗം സംഗ്രഹിക്കുന്നു. ഈ പാഠാസൂത്രണത്തിൽ മുകളിൽ പ്രതിപാദിച്ച പ്രവർത്തനങ്ങളിലൂടെ നിരീക്ഷണം, വ്യാഖ്യാനം, പ്രവചനം, വർഗ്ഗീകരണം, സംഗ്രഹം, അളവ്, വിലയിരുത്തൽ തുടങ്ങിയ പ്രക്രിയാശേഷികളും സ്വയം കുറ്റപ്പെടുത്തലും മറ്റുള്ളവരെ കുറ്റപ്പെടുത്തലും കുറയ്ക്കൽ, പരിചിന്തനം, ദാരുണസംഭവമായി ചിത്രീകരിക്കാതിരിക്കൽ സംശയാതീതമായ വീണ്ടും ശ്രദ്ധകേന്ദ്രീകരിക്കൽ, അംഗീകരിക്കൽ, ആസൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ, സംശയാതീതമായി പുനർ മൂല്യനിർണയം നടത്തൽ പുതിയ കാഴ്ചപ്പാടിലേക്ക് നയിക്കൽ തുടങ്ങിയ വൈകാരിക നിയന്ത്ര ശേഷികളും വികസിക്കുന്നു.

തുടർ പ്രവർത്തനങ്ങൾ

ചക്രങ്ങൾക്ക് മനുഷ്യനോട് എന്തെങ്കിലും സന്ദേശം നൽകാനുണ്ടെങ്കിൽ എന്തെല്ലാമായിരിക്കും അത്. തുടർ പ്രവർത്തനത്തെ കൂടുതൽ മനസ്സിലാക്കി കൊടുക്കുന്നതിന് വേണ്ടി അധ്യാപകൻ ഒരു ഉദാഹരണം വിശദീകരിക്കുന്നു. ഘടനകൊണ്ട് തുല്യതയും ഒരുമിച്ച് നിൽക്കുന്നതുകൊണ്ട് ഒരുപാട് വസ്തുക്കളെയും സാധനങ്ങളെയും അതിവേഗത്തിൽ സുരക്ഷിതമായി ഒരു സ്ഥലത്ത്നിന്നും മറ്റൊരിടത്തേക്ക് എത്തിക്കുന്നതിന് സാധിക്കും എന്ന് ചക്രങ്ങൾ നൽകുന്ന സന്ദേശം പോലെ മറ്റെന്തെല്ലാം സന്ദേശങ്ങളാണ് ചക്രങ്ങൾ മാനവരാശിക്ക് നൽകുന്നതെന്ന് കണ്ടെത്തുക.

Appendix X

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

LESSON TRANSCRIPT ON ANCHORED INSTRUCTIONAL APPROACH

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

Name of Teacher	:	Muhammed Haris. C		
Name of School	:	G.V.H.S.S. Kunnakkavu	Class	: VII
Subject	:	Social Science	Division	:
Unit	:	Map Reading	Duration	: 40 mts.
Topic	:	Importance of Map	Strength	: 45

Lesson Transcript I

Learning Objectives in terms of Content	:	1) To identify different locations in map 2) To get familiar with the different directions (East West, North and South) 3) Identify different routes on the map 4) Find shortest route on the map
Learning Objectives in Terms of Process Skills in Social Science	:	Observe, Locate, interpret, Predict, Classify, Synthesize, Measure, Evaluate
Learning Out come in terms of Emotional Regulation	:	Positive re appraisal, re focus on planning
Learning Materials	:	Anchored Instruction Videos
Previous Knowledge	:	Teacher expected about the students knowledge that there are different places in the world. Knowing direction has importance in life.

Choosing an appropriate Anchor	:	Teacher intends to take lesson on map reading. So he selected video of one child meeting an angel. He got a map and he is starting to explore wonderland. Through which students enable to identifies the directions, near and far routs, different locations so on
Developing shared expertise around the anchor	:	Teacher asks to find out different places based on the directions and nearest routs of wonder land
Expanding the Anchor	:	Teacher shows additional anchors for familiarizing the concept. And giving new tasks based on the concept
Teaching with the Anchor	:	Students basic knowledge about maps and directions used in the given context for identifying different place Teacher giving scaffolding by giving repeating the video and mentioning the content of videos. Teacher make conscious reference to the anchor
Merging the Anchor	:	Content of the anchor connect with learning experiences of the students for familiarizing the concept and develop the ability to apply in real situation
Allowing students exploration	:	Teacher gives the freedom to students to see the content in different perspectives. Individual freedom for self expression and more exploration make them more confident. Teacher consolidated all the findings and make the conclusion
Anchor Activity	:	Write an assignment on to find direction and different route of your school and home.

Lesson Transcript II

Name of Teacher	:	Muhammed Haris. C		
Name of School	:	G.V.H.S.S. Kunnakkavu	Class	: VIII
Subject	:	Social Science	Division	: A
Unit	:	From Food Gathering to Food Production	Duration	: 40 mts.
Topic	:	Invention of wheel	Strength	: 45

Learning Objectives in terms of Content	:	1) To identify different incidents leading to the invention of wheel 2) To get familiarity with the difference between the life before and after the invention of wheel 3) Identify major changes happened due to invention of wheel 4) Find out different sources of information regarding the inventions of wheel
Learning Objectives in Terms of Process Skills in Social Science	:	To Observe the videos regarding wheel and out comes expressed in terms of behaviours such as classify, predict, synthasise, interpret evaluate
Learning Out come in terms of Emotional Regulation	:	To watch videos regarding wheel and develop Positive re appraisal, Positive refocusing, refocus on planning to make positive changes in Self Blame, Rumination, Catastrophizing and develop attitude of acceptance through cooperative learning.
Learning Materials	:	1) Anchored Instruction Videos. 2) Blank Charts to make Anchor chart
Previous Knowledge	:	Teacher expected about the students know the difference between earlier man and later. The life styles of man is changed gradually. Some of the inventions helps the human beings for development

Choosing an appropriate Anchor	:	Teacher intends to take lesson on Invention of Map. So he selected video of different moving vehicles and asks what you can see in the pictures. They will responding according to their understanding. Teacher asks some additional questions such as what is in the video as common.
Developing shared expertise around the anchor	:	Based on the teachers query student watch the video and find there are different vehicles such as bus, car, bicycle so on. Similarly students find the common element of these vehicles are wheels
Expanding the Anchor	:	Teacher shows additional anchors for familiarizing the concept. And giving new tasks based on the concept wheel. Teacher shows one video of workshop there are different vehicles and their wheels.
Teaching with the Anchor	:	Teacher ask by showing each vehicle and ask to find which wheel is suitable for each vehicle. Students involves in meaningful watching and they starts to classify each wheels and different vehicles. They interpret and make judgment and synthesize each wheel to vehicles accordingly. After that teacher shows another video related to the invention of wheel.
Merging the Anchor	:	Teacher shows some incidents in the videos and ask the students to explain how it leads to invention of wheel. Students starts to hypothesize their answers. Similarly teacher ask about a world without wheel. Through which Content of the anchor connect with learning experiences of the students for familiarizing the concept and develop the ability to apply in real situation. Students predicts various situations and condition of a world without wheel.

Allowing students exploration	:	Teacher gives the freedom to students to see the content in different perspectives. So teacher distribute an Anchor Chart to each group and tell them to make different context and incidents may caused the invention of wheel. Individual freedom for self expression and more exploration make them more confident. So each individual also provided freedom to respond and suggest to make an anchor chart by each groups. It will make acceptance of others idea and freely communicate without blaming others, each individual get chance for expressing their idea by refocus on planning and Positive re appraisal and it leads to a positive refocusing. Through which a cooperative learning environment emerge their students get ample chance to apply their skills to complete various process. Teacher consolidated all the findings and make the conclusion by congratulating them in their findings and creative participation of the class.
Anchor Activity	:	If wheel has to give some message to human beings which are they? Teacher says some example that it gives a message of equality in structure and uniformity and leads a source of motion. Similarly find new messages from wheel to human kind?

Appendix IX

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

LESSON TRANSCRIPT ON ANCHORED INSTRUCTIONAL APPROACH

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

Name of Teacher	:	Muhammed Haris. C		
Name of School	:	G.V.H.S.S. Kunnakkavu	Class	: VIII
Subject	:	Social Science	Division	:
Unit	:	Map Reading	Duration	: 40 mts.
Topic	:	Importance of Map	Strength	: 45

Lesson Transcript I

ഉള്ളടക്കത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേശങ്ങൾ	:	1) ഭൂപടത്തിലെ വ്യത്യസ്ഥ സ്ഥലങ്ങൾ തിരിച്ചറിയുന്നതിന്. 2) വ്യത്യസ്ഥ ദിശകളെ കൂടുതൽ അടുത്തറിയുന്നതിന് (തെക്ക്, വടക്ക്, കിഴക്ക്, പടിഞ്ഞാറ്) 3) ഭൂപടത്തിലുള്ള വ്യത്യസ്ഥ വഴികൾ തിരിച്ചറിയുന്നതിന് 4) ഭൂപടത്തിലുള്ള ഏറ്റവും ചെറിയ വഴി കണ്ടെത്തുന്നതിന്
പ്രക്രിയാ ശേഷികളുടെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേങ്ങൾ	:	നിരീക്ഷണം, സ്ഥാനനിർണ്ണയം, വ്യാഖ്യാനം, പ്രവചനം, വർഗീകരണം, ഉത്ഗ്രഥനം, അളവ്, അവലോകനം, വിലയിരുത്തൽ.
വൈകാരിക നിയന്ത്രണത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠന ഉദ്ദേശങ്ങൾ	:	സ്വയം കുറ്റപ്പെടുത്തലും മറ്റുള്ളവരെ കുറ്റപ്പെടുത്തലും കുറയ്ക്കൽ അംഗീകരിക്കൽ. സംശയാതീതമായി വീണ്ടും ശ്രദ്ധ കേന്ദ്രീകരിക്കുക. ആസൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കുക സംശയാതീതമായി പുനർമൂല്യനിർണയം നടത്തുക, പുതിയ കാഴ്ചപ്പാടിലേക്ക് നയിക്കൽ.
പഠനസാമഗ്രികൾ	:	ആംങ്കേർഡ് ഇൻസ്ട്രക്ഷണൽ വീഡിയോ
മുന്നറിവ്	:	ലോകത്ത് പല പ്രദേശങ്ങലും ഉണ്ടെന്നുള്ള അറിവും, ദിശകൾ അറിഞ്ഞിരിക്കണ്ടത് ജീവിതത്തിൽ വളരെ പ്രധാനപ്പെട്ടതാണെന്നും കുട്ടികൾക്കറിയാം.

അനുയോജ്യമായ ആങ്കർ തിരഞ്ഞെടുക്കൽ	:	ഭൂപടവായന എന്ന പാഠഭാഗം പഠിപ്പിക്കുന്നതിന് വേണ്ടി ഒരു കുട്ടി ഒരു മാലാഘയെ കണ്ടുമുട്ടുന്ന വീഡിയോ പ്രദർശിപ്പിക്കുന്നു. ആ മാലാഖയിൽനിന്നും ലഭിച്ച ഭൂപടം ഉപയോഗിച്ച്കൊണ്ട് അവൻ എത്തിച്ചേർന്ന അത്ഭുത ദ്വീപിനെക്കുറിച്ച് കൂടുതൽ തിരിച്ചറിയുന്നു. ഈ വിഡിയോ നിരീക്ഷിക്കുന്ന കുട്ടികൾക്ക് വ്യത്യസ്ഥ ദിശകൾ തിരിച്ചറിയുന്നതിനും, അരികിലും അകലെയുമുള്ള വഴികളും പ്രദേശങ്ങളും തിരിച്ചറിയാനും സാധിക്കുന്നു.
ആങ്കറിനെ അടിസ്ഥാനമാക്കിയുള്ള നൈപുണികളുടെ വികസനം	:	അധ്യാപകൻ വീഡിയോയുടെ അടിസ്ഥാനത്തിൽ അത്ഭുതദ്വീപിന്റെ വ്യത്യസ്ഥ ദിശകളും അരികിലും അകലെയുമുള്ള വഴികളും കണ്ടെത്താൻ ആവശ്യപ്പെടുന്നു. അതിനു വേണ്ടി കുട്ടികളെ ഗ്രൂപ്പുകളാക്കി തിരിക്കുകയും നിശ്ചിതസമയം നൽകുകയും ചെയ്യുന്നു.
ആങ്കറിനെ വികസിപ്പിക്കൽ	:	വിദ്യാർത്ഥികളുടെ സംശയങ്ങൾ ദുരീകരിക്കുന്നതിനും പഠിക്കേണ്ട വിഷയങ്ങൾ നന്നായി മനസ്സിലാക്കികൊടുക്കുന്നതിനും വേണ്ടി ബന്ധപ്പെട്ട ലഘുവീഡിയോ ഭാഗങ്ങൾ കാണിക്കുകയും നേരത്തെ കാണിച്ച വീഡിയോ ഭാഗങ്ങൾ വിദ്യാർത്ഥികളുടെ ആവശ്യാർത്ഥം വീണ്ടും പ്രദർശിപ്പിക്കുകയും ചെയ്യുന്നു.
ആങ്കറിനെ ബന്ധിപ്പിച്ചുകൊണ്ട് പഠിപ്പിക്കൽ		വിദ്യാർത്ഥികൾക്ക് വീഡിയോയിലെ പ്രധാനപ്പെട്ട പാഠഭാഘങ്ങളെക്കുറിച്ച കൂടുതൽ ബന്ധിപ്പിച്ചുകൊണ്ട് പഠിപ്പിക്കുകയും അവരുടെ നിലവിലുള്ള ഭൂപടത്തെക്കുറിച്ചും ദിശകളെകുറിച്ചും ഉള്ള അറിവിനെ വീഡിയോയിൽ പ്രതിപാദിച്ച സാഹചര്യത്തിൽ ഉപയോഗിക്കുന്നതിന് വേണ്ടി സഹായിക്കുകയും ചെയ്യുന്നു. നൽകപ്പെട്ട ചോദ്യങ്ങൾക്ക് ഉത്തരങ്ങൾ കണ്ടെത്തുന്നതിനിടയിൽ ആവശ്യമായ കൈതാങ്ങ് നൽകുന്നതിന് വേണ്ടി വീഡിയോയിലെ വിവിധ ദൃശ്യങ്ങളെക്കുറിച്ച് പ്രതിപാദിക്കുന്നു.
പഠനം ആങ്കറുമായി സംയോജിപ്പിക്കൽ	:	പഠനാനുഭവങ്ങളെ കൂടുതൽ വിദ്യാർത്ഥികൾക്ക് പരിചയപ്പെടുത്തുന്നതിനും ആശയം വ്യക്തമാക്കുന്നതിനും വേണ്ടി ആങ്കർ വീഡിയോയിലേക്ക് കുട്ടികളുടെ ശ്രദ്ധകൊണ്ടുവരുന്നു. ഇതിലൂടെ കുട്ടികളെ പഠിക്കുന്ന പാഠഭാഗങ്ങളും അറിവുകളും നൈപുണികളും യഥാർത്ഥ ജീവിത സാഹചര്യങ്ങളിൽ പ്രയോഗിക്കുന്നതിന് പ്രാപ്തരാക്കുന്നു.

കുട്ടികളെ സമഗ്ര പഠനത്തിന് അനുവദിക്കൽ	:	കുട്ടികളെ അവരുടേതായ സംശയാതീതമായി പുനർമൂല്യനിർണയം ചെയ്യുന്നതിനും സാഹചര്യങ്ങളെ വ്യാഖ്യാനിക്കുന്നതിനുംവേണ്ടി സ്വതന്ത്രമായി അനുവദിക്കുക. വിദ്യാർത്ഥികളെ അവരുടെ സ്വതന്ത്രമായി അഭിപ്രായ പ്രകടനത്തിന് അനുവദിക്കുന്നതിലൂടെ അവരുടെ പ്രക്രിയാ ശേഷികളും വികസിപ്പിക്കുന്നതിനും വൈകാരിക നിയന്ത്രണശേഷി വികസനത്തിനും അധ്യാപകൻ സഹായിക്കുന്നു. ശേഷം കുട്ടികളുടെ കണ്ടെത്തലുകളെ ക്രോഡീകരിച്ച്കൊണ്ട് പാഠഭാഗം അവസാനിപ്പിക്കുന്നു.
ആങ്കർ പ്രവർത്തനം	:	നിങ്ങളുടെ വീട്ടിൽനിന്നും സ്കൂളിലേക്കുള്ള വ്യത്യസ്തമായ വഴികളും ദിശയും കണ്ടെത്തുക.

Lesson Transcript II

Name of Teacher	:	Muhammed Haris. C	
Name of School	:	G.V.H.S.S. Kunnakkavu	Class : VIII
Subject	:	Social Science	Division : A
Unit	:	From Food Gathering to Food Production	Duration : 40 mts.
Topic	:	Invention of Wheel	Strength : 45

ഉള്ളടക്കത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേശങ്ങൾ	:	1) ചക്രത്തിന്റെ കണ്ടുപിടിത്തത്തിലേക്ക് നയിച്ച വ്യത്യസ്ഥ സംഭവവികാസങ്ങൾ മനസിലാക്കുന്നതിന് 2) ചക്രത്തിന്റെ കണ്ടുപിടുത്തത്തിന് മുമ്പും ശേഷവുമുള്ള മനുഷ്യജീവിതത്തിന്റെ വ്യാത്യാസത്തെക്കുറിച്ച് അടുത്തറിയുന്നതിന്. 3) ചക്രത്തിന്റെ കണ്ട്പിടുത്തത്തോടെ ഉണ്ടായ പ്രധാനപ്പെട്ട മാറ്റങ്ങൾ തിരിച്ചറിയുന്നതിന്. 4) ചക്രത്തിന്റെ കണ്ടുപിടുത്തവുമായി ബന്ധപ്പെട്ട സ്രോതസ്സുകൾ മനസ്സിലാക്കുന്നതിന്.
പ്രക്രിയാ ശേഷികളുടെ അടിസ്ഥാനത്തിലുള്ള പഠനോദ്ദേങ്ങൾ	:	ചക്രത്തെക്കുറിച്ചുള്ള വീഡിയോ നിരീക്ഷിക്കുന്നതിലൂടെ വർഗീകരണം ഉത്ഗ്രഥനം, വിലയിരുത്തൽ, വ്യാഖ്യാനം, പ്രവചനം, തുടങ്ങിയ പ്രക്രിയാ ശേഷികൾ വികസിക്കുന്നതിന്.
വൈകാരിക നിയന്ത്രണത്തിന്റെ അടിസ്ഥാനത്തിലുള്ള പഠന ഉദ്ദേശങ്ങൾ	:	ചക്രത്തെക്കുറിച്ചുള്ള വീഡിയോകൾ നിരീക്ഷിക്കുന്നതിലൂടെ പരിചിന്തനം, ദാരുണസംഭവമായി ചിത്രീകരിക്കാതിരിക്കൽ, സംശയാതീതമായി വീണ്ടും ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ, അംഗീകരിക്കൽ, ആസൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കുക, പുതിയ കാഴ്ച്ചപ്പാടിലേക്ക് നയിക്കൽ, സംശാതീതമായി പുനർമൂല്യനിർണയം നടത്തുക തുടങ്ങിയ വൈകാരിക നിയന്ത്രണങ്ങൾ ഉണ്ടാകുന്നതിന്.
പഠനസാമഗ്രികൾ	:	ആംങ്കേർഡ് ഇൻസ്ട്രക്ഷണൽ വീഡിയോ ആങ്കർ ചാർട്ടിനുവേണ്ടിയുള്ള ചാർച്ച് പേപ്പറുകൾ.
മുന്നറിവ്	:	പുരാതന മനുഷ്യനും ആധുനികമനുഷ്യനും തമ്മിൽ വ്യത്യാസങ്ങൾ ഉണ്ടെന്നും മനുഷ്യന്റെ ജീവിതത്തിൽ മാറ്റ

		ങ്ങൾ വരുത്താൻ ചില കണ്ട്പിടുത്തങ്ങൾ സഹായിച്ചിട്ടുണ്ടെന്നും കുട്ടികൾക്കറിയാം.
അനുയോജ്യമായ ആങ്കർ തിരഞ്ഞെടുക്കൽ	:	ചക്രത്തിന്റെ കണ്ടുപിടുത്തം എന്ന പാഠഭാഗം പഠിപ്പിക്കുന്നിന് വേണ്ടി വിവിധതരം ഓടുന്ന വാഹനങ്ങളുടെ വീഡിയോ അധ്യാപകൻ പ്രദർശിപ്പിക്കുന്നു. വീഡിയോ നിരീക്ഷിക്കുന്ന വിദ്യാർത്ഥികളോട് അവർ കാണുന്ന ദൃശ്യങ്ങൾ എന്തെല്ലാമാണെന്ന് ചോദിക്കുകയും വിദ്യാർത്ഥികൾ അവരുടെ ധാരണകൾ അധ്യാപകനുമായി പങ്കുവെക്കുകയും ചെയ്യുന്നു. സഞ്ചരിക്കുന്ന വാഹനങ്ങളാണ് ദൃശ്യത്തിൽ ഉള്ളതെന്ന് പറയുന്ന വിദ്യാർത്ഥികളോട് വാഹനങ്ങൾക്ക് വ്യക്തമായി, പൊതുവായി ഉള്ളതെന്ന് എന്താണെന്ന് ചോദിക്കുന്നു.
ആങ്കറിനെ അടിസ്ഥാനമാക്കിയുള്ള നൈപുണികളുടെ വികസനം	:	അധ്യാപകന്റെ ചോദ്യത്തിനനുസരിച്ച് വിദ്യാർത്ഥികൾ വീഡിയോ വീണ്ടും ശ്രദ്ധിക്കുകയും കൂടുതൽ സഹകരണാടിസ്ഥാനത്തിലുള്ള പഠനത്തിനുവേണ്ടി അധ്യാപകൻ വീഡിയോയിൽ കാണുന്നത് ബസ്സ്, കാർ, സൈക്കിൾ, തുടങ്ങിയ വാഹനങ്ങൾ ആണെന്നും അവക്ക് പൊതുവായി പല കാര്യങ്ങളും ഉണ്ടെങ്കിലും അതിൽ ഏറ്റവും പ്രധാനപ്പെട്ടത് ചക്രങ്ങളാണെന്നും വിദ്യാർത്ഥികൾ പ്രതികരിച്ചു.
ആങ്കറിനെ വികസിപ്പിക്കൽ	:	വിദ്യാർത്ഥികൾക്ക് ആശയം കൂടുതൽ വ്യക്തമാക്കുന്നതിന് വേണ്ടിയും വസ്തുതകൾ നന്നായി മനസ്സിലാക്കികൊടുക്കുന്നതിന് വേണ്ടിയും പുതിയ ലഘുവീഡിയോ ഭാഗങ്ങൾ അധ്യാപകരൻ വീണ്ടും പ്രദർശിപ്പിക്കുന്നു. പല വാഹനങ്ങളും വ്യത്യസ്ഥ ചക്രങ്ങളും ഉൾക്കൊള്ളുന്ന ഒരു വർക്ക്ഷോപ്പിന്റെ വീഡിയോ ആണ് നേരത്തെ കാണിച്ച വിഡിയോട് ബന്ധപ്പെടുത്തി അധ്യാപകൻ കാണിച്ചത്. ഇതിലൂടെ നിലവിലുള്ള ആങ്കറിനെ കൂടുതൽ വ്യക്തമാക്കുന്നതിന് വേണ്ടി അധിക വിവരങ്ങൾ നല്കിക്കൊണ്ട് ചക്രങ്ങളെക്കുറിച്ചുള്ള ആശയത്തെ അധ്യാപകൻ വികസിപ്പിക്കുന്നു.
ആങ്കറിനെ ബന്ധിപ്പിച്ചുകൊണ്ട് പഠിപ്പിക്കൽ		വിദ്യാർത്ഥികളുടെ പഠനാനുഭവങ്ങളെ വീഡിയോയിലെ പ്രധാനപ്പെട്ട പാഠഭാഗങ്ങളുമായി ബന്ധിപ്പിച്ചു പഠിപ്പിക്കുന്നതിന്റെ ഭാഗമായ് വീഡിയോയിൽ കാണുന്ന വാഹനങ്ങളും അവയുടെ ചക്രങ്ങളും താരതമ്യം ചെയ്ത് അനു

		യോജ്യമായവ കണ്ടെത്താൻ പറയുന്നു. കുട്ടികൾ അർത്ഥ പൂർണമായി വീണ്ടും ദൃശ്യങ്ങളെ നിരീക്ഷിക്കുകയും ചക്ര ങ്ങളെയും അവയുടെ വാഹനങ്ങളെയും വർഗീകരിക്കു കയും ചെയ്യുന്നു. അതുപോലെതന്നെ ഈ പ്രവർത്തന ത്തിലൂടെ വ്യാഖ്യാനിക്കുക ഉത്ഗ്രഥിക്കുക, വിലയിരുത്തു ക. തുടങ്ങിയ പ്രക്രിയാശേഷികളും വിദ്യാർത്ഥികൾ ഉപ യോഗിക്കുന്നു. അതിനുശേഷം വിദ്യാർത്ഥികൽ അധ്യാപ കൻ പുതിയ ഒരു വീഡിയോകൂടി കാണിക്കുന്നു.
പഠനം ആങ്കറുമായി സംയോജിപ്പിക്കൽ	:	പുതിയ വീഡിയോയിൽ ചക്രത്തിന്റെ കണ്ട് പിടുത്തത്തി ലേക്ക് നയിച്ച സംഭവവികാസങ്ങളാണ് ഉൾക്കൊണ്ടിരുന്ന ത്. ദൃശ്യം കണ്ടതിന് ശേഷം ചക്രത്തിന്റെ കണ്ട്പിടുത്ത ത്തിലേക്ക് നയിച്ച വിവിധ സംഭവവികാസങ്ങളെക്കുറിച്ച് വിശദീകരിക്കാൻ അധ്യാപകൻ ആവശ്യപ്പെടുന്നു. പാഠഭാ ഗങ്ങളിൽനിന്നു കിട്ടിയ പുതിയ അറിവിനെ യഥാർത്ഥ ജീവിതത്തിൽ പ്രയോഗിക്കുന്നതിന് വേണ്ടി ചക്രങ്ങൾ ഇല്ലാത്ത ലോകത്തിന്റെ അവസ്ഥയെക്കുറിച്ച് കൂടുതൽ വിശദീകരിക്കാൻ വിദ്യാർത്ഥികളോട് അധ്യാപകൻ ആവ ശ്യപ്പെടുന്നു. ഇതിലൂടെ വിദ്യാർത്ഥികളിൽ പ്രവചനം, വ്യാഖ്യാനം, വിലയിരുത്തൽ തുടങ്ങിയ പ്രക്രിയാശേഷി കളും സംശയാതീതമായി വീണ്ടും ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ, അംഗീകരിക്കൽ ആസൂത്രണത്തിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കൽ, സംശയാതീതമായി പുനർമൂല്യനിർണയം നടത്തൽ തുട ങ്ങിയ വൈകാരിക നിയന്ത്രണശേഷികളും വികസിക്കുന്നു. ചക്രങ്ങൾ ഇല്ലാത്ത ലോകത്ത് ഉണ്ടായേക്കാവുന്ന വിവിധ സാഹചര്യങ്ങളെക്കുറിച്ച് വിദ്യാർത്ഥികൾ വിശദീകരിക്കു ന്നു.
കുട്ടികളെ സമഗ്ര പഠ നത്തിന് അനുവദി ക്കൽ	:	വിദ്യാർത്ഥികളെ പുതിയ കാഴ്ചപ്പാടിലേക്ക് നയിക്കുന്ന തിന് വേണ്ടി പാഠഭാഗത്തെ വ്യത്യസ്ഥ വീക്ഷണകോണി ലൂടെ നോക്കിക്കാണാൻ അധ്യാപകൻ വിദ്യാർത്ഥികൾക്ക് പൂർണ സ്വാതന്ത്ര്യം നൽകുന്നു. ആങ്കർ ചാർട്ട് നിർമിക്കു ന്നതിനുള്ള ചാർട്ടുകൾ ഗ്രൂപ്പുകൾക്ക് നൽകുകയും ചക്ര ത്തിന്റെ കണ്ടുപിടുത്തത്തിലേക്ക് നയിച്ച വിവിധ സംഭവ ങ്ങളെയും അവരുടേതായ ഭാവനയിലും അഭിപ്രായ ത്തിലും ആങ്കർ ചാർട്ടിൽ ചിത്രം സഹിതം വിശദീകരി ക്കൽ ആവശ്യപ്പെടുന്നതിലൂടെ മറ്റുള്ളവരെ അംഗീകരി ക്കാനും സ്വയം കുറ്റപ്പെടുത്താതിരിക്കാനും മറ്റുള്ളവരെ

കുറ്റപ്പെടുത്താതിരിക്കാനും പരിചിന്തനം നടത്താനും ദാരുണ സംഭവമായി ചിത്രീകരിക്കാതിരിക്കാനും സംശയാതീതമായി പുനർ മൂല്യനിർണയം നടത്താനും സാധിക്കുന്നു. കൂടാതെ ഓരോ വിദ്യാർത്ഥിയും സ്വന്തം അറിവിനെ പ്രകടിപ്പിക്കുന്നതിലൂടെ കൂടുതൽ ആത്മവിശ്വാസം ഉള്ളവരായി തീരുന്നു. സഹകരണാടിസ്ഥാനത്തിലുള്ള പഠനാന്തരീക്ഷത്തിലൂടെ നിരീക്ഷണം, ഉത്ഗ്രദനം, വ്യാഖ്യാനം, വിലയിരുത്തൽ തുടങ്ങിയ പ്രക്രിയാശേഷികളും വികസിക്കാൻ ഉള്ള സാഹചര്യം വിദ്യാർത്ഥികൾക്ക് ലഭിക്കുന്നു ശേഷം വിദ്യാർത്ഥികളുടെ കണ്ടെത്തലുകൾ അധ്യാപകൻ ക്രോഡീകരിക്കുകയും അവരുടെ ക്രിയാത്മകമായ പങ്കാളിത്തത്തിനെ അഭിനന്ദിക്കുകയും ചെയ്യുന്നു.

ആങ്കർ പ്രവർത്തനം : ചക്രങ്ങൾക്ക് മനുഷ്യരോട് എന്തെങ്കിലും സന്ദേശം നൽകാനുണ്ടെങ്കിൽ എന്തെല്ലാമായിരിക്കും അത്. ആങ്കർ പ്രവർത്തനെത്തെ കൂടുതൽ മനസ്സിലാക്കി കൊടുക്കുന്നതിന് വേണ്ടി അധ്യാപകരൻ ഒരു ഉദാഹരണം വിശദീകരിക്കുന്നു. ഘടനകൊണ്ട് തുല്യതയും ഒരുമിച്ച് നിൽക്കുന്നതുകൊണ്ട് ഒരുപാട് വസ്തുക്കളെയും സാധനങ്ങളെയും എത്തിക്കുന്നതിന് സാധിക്കും എന്ന് ചക്രങ്ങൾ നൽകുന്ന സന്ദേശം പോലെ മറ്റെന്തെല്ലാം സന്ദേശങ്ങളാണ് ചക്രങ്ങൾ മാനവരാശിക്ക് നൽകുന്നതെന്ന് കണ്ടെത്തുക.

Appendix VII

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

PROCESS SKILLS IN SOCIAL SCIENCES

Response Sheet

Name of the Student:……..….....…..... Gender: Male/Female

Name of the School:……..... Locality: Rural/Urban

Type of Management: Government/Aided/C.B.S.E

Sl. No.	A	B	C	D
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				

Sl. No.	A	B	C	D
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				

Appendix VIII

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

PROCESS SKILLS IN SOCIAL SCIENCES

SCORING KEY

Sl. No.	A	B	C	D
1.		✓		
2.	✓			
3.		✓		
4.	✓			
5.			✓	
6.	✓			
7.		✓		
8.		✓		
9.		✓		
10.	✓			
11.	✓			
12.		✓		
13.		✓		
14.	✓			
15.		✓		
16.		✓		

Sl. No.	A	B	C	D
17.		✓		
18.			✓	
19.	✓			
20.				✓
21.			✓	
22.	✓			
23.			✓	
24.		✓		
25.	✓			
26.			✓	
27.		✓		
28.			✓	
29.			✓	
30.		✓		
31.		✓		
32.		✓		

Appendix VI

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

PROCESS SKILLS IN SOCIAL SCIENCES

(For Standard IX Students)

Dr. P.K. Aruna
Associate Professor

Shiji, K., & Surabi, K.S.
M.Ed. Students

Instructions

This is a test in social sciences. Don't write anything in the answer sheet. The number of questions is given in the answer sheet. For each questions four answers are given with the choices, A, B, C and D. Find out suitable answers from the choices A, B, C and D. Find out suitable answer and put a '✓' mark in the correct answer

---

1. What will be the result in future if man continues his deforestation process for various purpose?
   A. Rain increases
   B. Rain decreases
   C. Temperature decreases
   D. No change will be occur

   The following table represents an extract of the analytical report of Kerala State Pollution Control Board which conducted a survey on ambient quality of air at over bridge in Trivandrum city. The report was published in 2008, examine the table and find out the answer for 2 and 3 question.

Parameter	Sulphur Dioxide	Nitrogen Oxide	Fine Particles	Crystalline Particles
Annual Average	6.9 μg/m^3	29.2 μg/m^3	60 μg/m^3	80 μg/m^3
Limit	Max: 15 μg/m^3	Max: 15μg/m^3	Max: 50 μg/m^3	Max: 7 μg/m^3

2. Find out the excessment of sulphur dioxide above permissible level.
   A. 8.1 μg/m^3 B. 10.8μg/m^3 C. 12.3μg/m^3 D. 20.6 μg/m^3
3. Find out the excessment of nitrogen oxide above permissible level.
   A. 18.7 μg/m^3 B. 14.2μg/m^3 C. 16.2μg/m^3 D. 11.7 μg/m^3
4. What should be taken to protect the living things from global warming?
   A. Reduces air pollution
   B. Produce more air condition equipments
   C. Organize new industries
   D. No special needs

5.

Map	Theme	Elaboration
Physical Map	Physiography	Places of varying heights, rivers, heights of peaks, etc.
Political map	Peculiarities of nations	Boundaries, states, capitals, towns, etc.

Look at the schedule and to find out the list of various themes represented?

i) Physical map explain, states and towns.
ii) Physical map represents physiography
iii) Political map included the peculiarities of the nation
iv) Boundaries, states and capitals included in political map.

A) i, iii, iv B) i, ii, iii C) ii, iii, iv D) i, ii, iv

6. What will be the effects in international market if the price of crude of increases?.

A) Petrol, diesel and LPG prices will increase
B) Petrol, diesel and LPG prices will decrease
C) Import and export will be easier
D) No change will happen.

7. If earth won't rotate what will happen?

A) Seasons does not exist
B) Day night will not exist
C) Rotate will exist
D) No change will be there

8. A presiding officer of a polling booth does not permit a person to caste his vote. How this situation can be justified legally?

A) Electing representative
B) Mentally disabled
C) He is a minor
D) He is a senior citizen.

9. What is the marked portion represent in following map?

A) Railway line, Tarred Road
B) Tarred Road, River
C) Railway line, River
D) Village Road, River

10. What will be the result, if the chlorofluro carbon increase in future?

    A) Global warming B) Agricultural production increase

    C) Temperature decrease D) Nothing will happen

11. In India, the birth rate is far more than the death rate. If it continues life this what will be the result?

    A) Population explosion

    B) Economic development

    C) Agriculture development

    D) National development

12. Volcanic eruptions are very threats of human life, but people prefer these places for living, why?

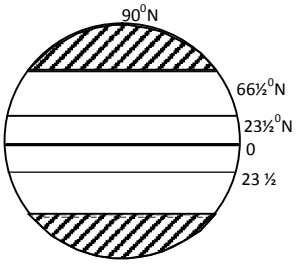
    A) They do not afraid volcanic eruptions.

    B) Availability of rich minerals

    C) Other places are not allow for living

    D) Less temperature places.

13. The following picture shows the various pressure belt zones. The shaded parts of the picture are known as



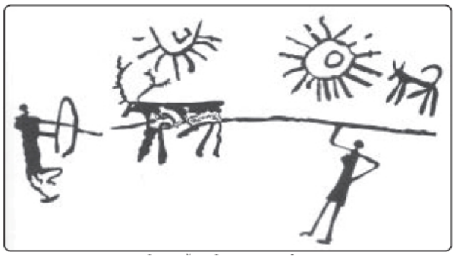
    A) Temperature zone

    B) Polar Zone

    C) Equatorial zone

    D) None of these

14. The below given picture shows an old stone age. Observe the picture and identify their labour?



    A) Hunting

    B) Agriculture

    C) Cattle rearing

    D) Trade

15. In the following fields, classify the presents of women in various fields.

    1. National service 2. Well construction 3. Nursing

    4. Teaching 5. Small Scale Industry

    A) 1, 3, 4 B) 2, 4 5 C) 3, 4, 5 D) 1, 2, 4

16. The given flowchart shows the goods reach to our locality/shops from the store houses. Choose appropriate from the brackets.

Producer
↓
.....
↓
Retailer
↓
.....

A) Production, Consumer B) Wholesaler, Product

C) Wholesaler, Consumer D) Product, Consumer, Wholesaler

17. The following has given the comparative study of Globe and Map, Classify them.

i. Collection of details about the region of small extent is possible.
ii. True shape and equal area of a continents can be determined accurately.
iii. Difficult to incorporate new data
iv. Cost of production is comparatively low.
v. Size can't be easily enlarged or reduced.
vi. Difficult to convey from place.

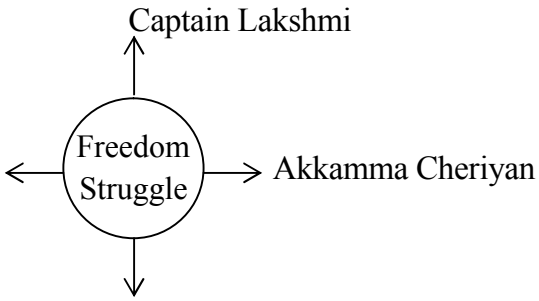
A) Globe (1, 2, 5) Map (3, 4 6)

B) Globe (3, 5, 6) Map (1, 2, 4)

C) Globe (2, 3, 6) Map (1, 4, 5)

D) Globe (2, 8, 5) Map (2, 3, 6)

18. Complete the following word sun



A) Anna chandi, Akkamma Cheriyan

B) Sister nivedhitha, Sarojini Naidu

C) Madam cama, A.V. Kuttimalu Amma

D) Indira Gandhi, Fathima Beevi

19. The following has given the name of famous personalities, who participated in the freedom struggle of India. Classify these leaders into moderates and extremists.

    1) Bhagath Singh, 2) Gokhale, 3) Thilak, 4) Lala Lajpath Ray, 5) Gandhi, 6) Bipin Chandra, 7) Dada Bhai Navroji

    A) Moderates (2, 5, 7), Extremists (1, 3, 4, 6)
    B) Moderates (3, 4, 6), Extremists (1, 2, 5, 7)
    C) Moderates (7, 2, 1), Extremists (4, 5, 7, 2)
    D) Moderates (3, 2, 5), Extremists (2, 4, 6, 1)

20. Which bronze-age place represented the mark 'X' in the following world map?

    A. Harappan B. Chinese C. Egyptian D. Mezopottamia

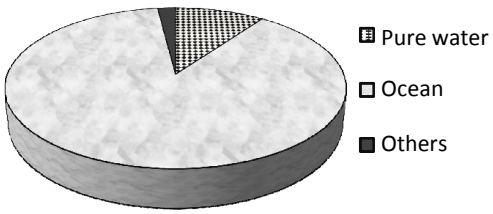
21. Most of the ancient civilizations originated from the coastal regions. What you understand from this statement.

    A. The availability of modern facilities in the coastal regions.
    B. Depends on the ships for voyage to other countries.
    C. Availability of pure water and fertile soil existing in the coastal area.
    D. Appropriate facilities for social life.

22. The following map shows Harappan civilization city Lothal. Now in which state, the place locating.

    A. Gujarat
    B. Maharastra
    C. Rajasthan
    D. Madhyapradesh

23. The following pie diagram shows major source of water resource amount. Analysis diagram carefully and answer the question. What is the position of pure water resource in the total water sources?



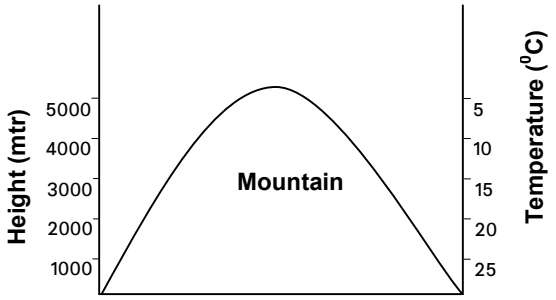
    A) One B) Two C) Three D) None of these

24. Calculate daily mean temperature in the place, if the maximum temperature is 32^0C and minimum temperature is 22^0C in a day?

A) 25^0C B) 27^0C C) 23^0C D) 26^0C

25. The given picture shows the relationship between height and temperature variation answer from below pick your measure carefully from the below given options.

A. Temperature decreases height increases
B. Temperature increases height decreases
C. Temperature decreases height decreases
D. No change happen



26. Identify the region from the British India map.

A. Surat split
B. British – India capital
C. Partition of Bengal
D. Location of Wagan tragedy.

27. Identify the false statement from the following.

A. Continuous acid rain pollutes the water
B. The Acid rain does not affect the growth of children
C. Acid rain stands the growth of plants
D. Deterioration of agriculture sector

28. Which statements are most suitable for the Reserve Bank.

1. Reserve Bank is the central bank of India
2. RBI issued the one Rupee notes.
3. The headquarters of RBI is in Mumbai
4. RBI does not advices in relation of currency system and credit price.

A. 1, 2
B. 3, 4
C. 1, 3
D. 2, 4

29. A-B are the important aim of Indian National Congress and more important aims also given below (1, 2, 3, 4). Choose the correct statement.

    A. To build a good relationship between political workers across India

    B. Enhance the national unity above caste and religion.

    Other Aims

    1. Organize a public opinion
    2. Express more trust on British Rule
    3. Express public needs to the British government
    4. Gain trust from the British Rule

    A) 2, 4 B) 1, 4 C) 1, 3 D) 1, 2

30. In picture 1 their steep region which is shown in 'B' shows comes closer the intervals between contours. And side of 'A' represents the intervals of contour distances is shown differentiate statement from this picture.

    A. Intervals between contours are less the slope of hill is less.

    B. Intervals between contours are less the slope of hills is horizontally

    C. Intervals of contours does not effect the slope of hills.

    D. Does not change any more

31. Which age is represents the following statements?

    1. The origin of agriculture
    2. Cattle rearing
    3. Polished stone tools
    4. Manufacture of rough clay pottery
    5. Beginning of social life

    A) Paliolithic age B) Neolithic age
    C) Mesolithic age D) Pleistocene

32. Sex ratio of Indian and Kerala given in the following graph.

    Find the correct statement from the graph.

    A. Number of male members are higher in Kerala from the other states.

    B. The male members are higher in India, But female members are higher in Kerala.

    C. The sex ratio of India and Kerala are equal

    D. Cannot express any change

Appendix V

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

PROCESS SKILLS IN SOCIAL SCIENCES
(For Standard IX Students)

Dr. P.K. Aruna
Associate Professor of Education

Shiji, K., & Surabi, K.S.
M.Ed. Students

നിർദ്ദേശങ്ങൾ: ഈ ടെസ്റ്റിൽ ആകെ 32 ചോദ്യങ്ങളുണ്ട്. ഓരോന്നിനും A, B, C, D എന്നിങ്ങനെ നാല് ഉത്തരങ്ങൾ കൊടുത്തിട്ടുണ്ട്. ഇതോടൊപ്പം തരുന്ന ഉത്തരക്കടലാസ്സിൽ ശരിയായ ഉത്തരം '✓' അടയാളമിട്ട് രേഖപ്പെടുത്തുക. ചോദ്യക്കടലാസിൽ ഒന്നുംതന്നെ എഴുതുവാനോ അടയാളപ്പെടുത്തുവാനോ പാടില്ല. എല്ലാ ചോദ്യങ്ങൾക്കും ഉത്തരം എഴുതുവാൻ ശ്രമിക്കണം.

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1. മരങ്ങളെ മനുഷ്യന്റെ വിവിധ ആവശ്യങ്ങൾക്കായി മുറിച്ചുമാറ്റിയാൽ ഭാവിയിൽ എന്തായിരിക്കും ഫലം?

   A. മഴയുടെ തോത് വർദ്ധിക്കും
   B. മഴയുടെ തോത് കുറയും
   C. ചൂട് കുറയും
   D. മാറ്റങ്ങൾ സംഭവിക്കുന്നില്ല

2. സൾഫർ ഡൈ ഓക്സൈഡിന്റെ അളവ് അനുവദിനീയമായതിലും എത്ര കൂടുതലുണ്ട് എന്ന് കണ്ടുപിടിക്കുക.

   A. 8.1 $\mu g/m^3$ B. 18.3 $\mu g/m^3$ C. 12.3 $\mu g/m^3$ D. 20.6 $\mu g/m^3$

3. നൈട്രജന്റെ ഓക്സൈഡിന്റെ അളവ് അനുവദനീയമായതിലും എത്ര കൂടുതലുണ്ട് എന്ന് കണ്ടുപിടിക്കുക?

   A. 18.7 $\mu g/m^3$ B. 14.2 $\mu g/m^3$ C. 16.2 $\mu g/m^3$ D. 11.7 $\mu g/m^3$

4. ഭൂമിയിലെ ജീവജാലങ്ങളെ ആഗോളതാപവ്യാപനത്തിൽ നിന്നും രക്ഷിക്കാൻ എന്തു നടപടിയാണ് സ്വീകരിക്കേണ്ടത്?

   A. അന്തരീക്ഷ മലിനീകരണം പരമാവധി കുറയ്ക്കുക
   B. കൂടുതൽ ശീതീകരണ ഉപകരണങ്ങൾ നിർമ്മിക്കുക
   C. പുതിയ വ്യവസായങ്ങൾ തുടങ്ങുക
   D. പ്രത്യേക മാർഗ്ഗങ്ങൾ ആവശ്യമില്ല

5.

ഭൂപടം	വിഷയമേഖല	വിശദീകരണം
ഭൗതിക ഭൂപടം	ഭൂപ്രകൃതി	വ്യത്യസ്തമായ പ്രദേശങ്ങൾ, നദികൾ, കൊടുമുടികളുടെ ഉയരം മുതലായവ
രാഷ്ട്രീയ ഭൂപടം	രാഷ്ട്രത്തിന്റെ സവിശേഷതകൾ	അതിർത്തികൾ, സംസ്ഥാനങ്ങൾ, തലസ്ഥാനങ്ങൾ, പട്ടണങ്ങൾ മുതലായവ

മുകളിൽ കൊടുത്തിരിക്കുന്ന പട്ടികയിൽ നിന്നും താഴെ പറയുന്ന ഏതൊക്കെ അനുമാനത്തിൽ നിങ്ങൾക്ക് എത്തിച്ചേരാം

1. ഭൗതികഭൂപടത്തിൽ സംസ്ഥാനങ്ങളേയും പട്ടണങ്ങളേയും വിശദീകരിക്കുന്നു.
2. ഭൗതിക ഭൂപടത്തിൽ ഭൂപ്രകൃതി പ്രധാനവിഷയ മേഖലയാകുന്നു.

3. രാഷ്ട്രീയ ഭൂപടത്തിൽ രാഷ്ട്രത്തിന്റെ സവിശേഷതകൾ ഉൾക്കൊള്ളുന്നു.
4. രാഷ്ട്രീയ ഭൂപടത്തിൽ അതിർത്തികൾ തലസ്ഥാനങ്ങൾ എന്നിവ പ്രതിപാദിക്കുന്നു.

A. (1, 3, 4) B. (1, 2, 3) C. (2, 3, 4) D. (1, 2, 4)

6. അന്താരാഷ്ട്ര വിപണിയിൽ അസംസ്കൃത എണ്ണയുടെ വിലക്കയറ്റം വർദ്ധിച്ചാൽ എന്തു സംഭവിക്കും?

A. പെട്രോൾ, ഡീസൽ, പാചകവാതകം തുടങ്ങിയവയുടെ വില കൂടും
B. പെട്രോൾ, ഡീസൽ, പാചകവാതകം തുടങ്ങിയവയുടെ വില കുറയും
C. കയറ്റുമതി, ഇറക്കുമതി സുഗമമാകും
D. പ്രത്യേകം മാറ്റങ്ങൾ ഉണ്ടാകുന്നില്ല

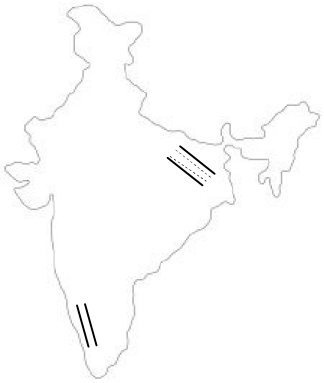
7. ഭൂമി ഭ്രമണം ചെയ്തില്ലായിരുന്നെങ്കിൽ എന്തായിരിക്കും സംഭവിക്കുക?

A. ഋതുക്കൾ ഉണ്ടാവില്ല B. രാത്രിയും പകലും ഉണ്ടാവില്ല
C. രാത്രിയും പകലും ഉണ്ടാകുന്നു D. ഒരു മാറ്റവും സംഭവിക്കുന്നില്ല

8. പോളിംഗ് ബൂത്തിൽ വോട്ട് ചെയ്യാനെത്തിയ ഒരു വ്യക്തിയെ പ്രിസൈഡിങ് ഓഫീസർ വോട്ടു ചെയ്യാൻ അനുവദിക്കുന്നില്ല. ഈ നടപടി നിയമപരമായി ശരിയാകുന്ന സാഹചര്യം കണ്ടെത്തി എഴുതുക?

A. ജനപ്രതിനിധി ആയതുകൊണ്ട്
B. ചിത്തഭ്രമം ബാധിച്ചതുകൊണ്ട്
C. പതിനെട്ടു വയസ് തികഞ്ഞതുകൊണ്ട്
D. വൃദ്ധനായ വ്യക്തി ആയതുകൊണ്ട്

9. താഴെ കൊടുത്തിരിക്കുന്ന ഭൂപടത്തിൽ അടയാളപ്പെടുത്തിയിരിക്കുന്നത് എന്തിനെയാണ് സൂചിപ്പിക്കുന്നത്.



A. റെയിൽവെ ലൈൻ, ടാർഡ് റോഡ്
B. ടാർഡ്റോഡ്, നദി
C. റെയിൽവെ ലൈൻ, നദി
D. ടാർ ചെയ്യാത്ത റോഡ്, നദി

10. ക്ലോറോ ഫ്ളൂറോ കാർബൺ അന്തരീക്ഷത്തിൽ വർദ്ധിച്ചാൽ ഭാവിയിൽ എന്തു സംഭവിക്കും?

A. ആഗോളതാപനം B. കൃഷിവർദ്ധനവ്
C. ചൂടു കുറയുന്നു D. ഒന്നും സംഭവിക്കുന്നില്ല

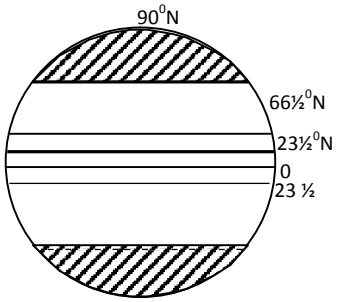
11. ഇന്ത്യയിൽ ജനനനിരക്ക് മരണ നിരക്കിനേക്കാൾ വളരെയധികം കൂടുതലാണ്. ഇത് തുടർന്നാൽ എന്തു മാറ്റമായിരിക്കും സംഭവിക്കുക.

A. ജനസംഖ്യാ വിസ്ഫോടനം
B. സാമ്പത്തിക വളർച്ച
C. കാർഷിക പുരോഗതി
D. രാഷ്ട്ര പുരോഗതി

12. അഗ്നിപർവ്വത സ്ഫോടനം പ്രദേശങ്ങൾ ജീവനു ഭീഷണിയാണെങ്കിലും ജനങ്ങൾ വാസയോഗ്യത്തിനു തെരഞ്ഞെടുക്കാറുണ്ട്. ഇതിൽ നിന്നും എന്ത് അനുമാനത്തിൽ എത്തിച്ചേരാം?

A. അഗ്നിപർവ്വത സ്ഫോടനത്തെ തീരെ ഭയം ഇല്ലാത്തത് കൊണ്ട്
B. ഖനി വസ്തുക്കളുടെ ലഭ്യത കൂടുതൽ ആയതുകൊണ്ട്
C. മറ്റു പ്രദേശങ്ങൾ താമസത്തിനു ലഭിക്കാത്തതുകൊണ്ട്.
D. ചൂട് കുറഞ്ഞ പ്രദേശമായതു കൊണ്ട്.

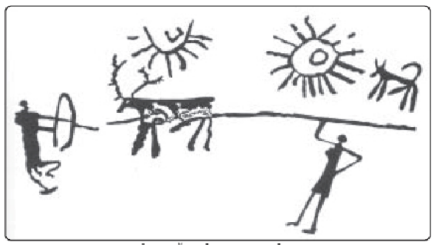
13. താഴെ കൊടുത്തിരിക്കുന്ന ചിത്രം വിവിധ താപീയ മേഖലകളെ സംബന്ധിച്ചുള്ള താണ്. ചിത്രത്തിൽ ഷെയ്ഡ് ചെയ്തിരികകുന്ന ഭാഗം ഏത് പേരിലാണ് അറിയപ്പെടുന്നത്?



A. ഉഷ്ണമേഖല
B. ശൈത്യമേഖല
C. സമ ശീതോഷ്ണ മേഖല
D. ഭൂമദ്ധ്യരേഖാപ്രദേശം

14. താഴെ തന്നിരിക്കുന്നത് പ്രാചീന ശിലായുഗത്തിലെ ഗുഹാചിത്രമാണ്. ചിത്രം നിരീക്ഷിച്ച് പ്രാചീന ശിലായുഗത്തിന്റെ പ്രധാനതൊഴിൽ ഏതാണെന്ന് കണ്ടെത്തുക?

A. വേട്ടയാടൽ
B. കൃഷി
C. മൃഗപരിപാലനം
D. കച്ചവടം



15. താഴെ പറയുന്ന തൊഴിലുകളിൽ സ്ത്രീ സാന്നിധ്യം കൂടുതലുള്ളവ വേർതിരിച്ച് എഴുതുക.

1. രാജ്യസേവനം
2. അധ്യാപനം
3. കിണർ നിർമ്മാണം
4. ചെറുകിട വ്യവസായം
5. ആതുര ശുശ്രൂഷ

A. (1, 3, 4) B. (2, 4, 5) C. (3, 4, 5) D. (1, 2, 4)

16. സംഭരണശാലകളിൽ നിന്ന് സാധനങ്ങൾ നമ്മുടെ പ്രദേശത്തേയ്ക്ക്/കടകളിൽ എത്തുന്ന തിന്റെ ഫ്ളോചാർട്ടു താഴെ കൊടുത്തിരിക്കുന്നു. അനുയോജ്യമായവ തെരഞ്ഞെടുത്ത് പൂർത്തീകരിക്കുക.

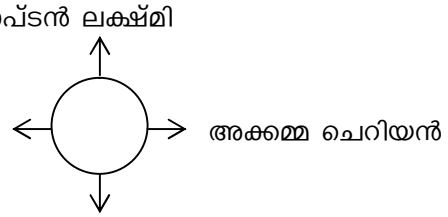
ഉൽപാദകർ (Producer)
↓
.....
↓
ചെറുകിടവ്യാപാരി (Retailer)
↓
.....

A. ഉൽപാദനം, ഉപഭോക്താവ് B. മൊത്തവ്യാപാരി, ഉൽപന്നം
C. മൊത്തവ്യാപാരി, ഉപഭോക്താവ് D. ഉൽപന്നം, ഉപഭോക്താവ്, മൊത്തവ്യാപാരി

17. ഗ്ലോബും, ഭൂപടവും തമ്മിലുള്ള താരതമ്യ പഠനത്തിൽ ശരിയായവതരംതിരിക്കുക
    1. വിസ്തൃതി കുറഞ്ഞ പ്രദേശ വിവരശേഖരണം എളുപ്പമാണ്
    2. ഭൂഖണ്ഡങ്ങളുടെ യഥാർത്ഥ ആകൃതി, ദിശ എന്നിവ കൃത്യമായി നിർണയിക്കുന്നു.
    3. പുതിയ വിവരങ്ങൾ ചേർക്കാൻ പ്രയാസമാണ്
    4. നിർമ്മാണം താരതമ്യേന ചെലവു കുറഞ്ഞതാണ്
    5. അനായാസം വലുതക്കാനും ചെറുതാക്കാനും കഴിയുന്നില്ല.
    6. കൊണ്ടുനടക്കാൻ പ്രയാസമാണ്

    A. ഗ്ലോബ് (1, 2, 5) ഭൂപടം (3, 4, 6)
    B. ഗ്ലോബ് (3, 5, 6) ഭൂപടം (1, 2, 4)
    C. ഗ്ലോബ് (2, 3, 6) ഭൂപടം (1, 4, 5)
    D. ഗ്ലോബ് (2, 8, 5) ഭൂപടം (2, 3, 6)

18. താഴെ തന്നിരിക്കുന്ന പദസൂര്യൻ പൂർത്തിയാക്കുക



    A. അന്നാചാണ്ടി, അക്കമ്മ ചെറിയാൻ B. സിസ്റ്റർ നിവേദിത, സരോജിനി നായിഡു
    C. മാഡം കാമ, എ.വി.കുട്ടിമാളു അമ്മ D. ഇന്ദിരാഗാന്ധി, ഫാത്തിമാബീവി

19. ഇന്ത്യൻ സ്വാതന്ത്ര്യസമരത്തിൽ പങ്കെടുത്ത പ്രധാന നേതാക്കളുടെ പേരു താഴെ തന്നിരിക്കുന്നു. ഇതിൽ 'മിതവാദികൾ' 'തീവ്രവാദികൾ' എന്നിവ തരംതിരിക്കുക.

    1. ഭഗത് സിംഗ് **2.** ഗോഖലെ **3.** ബാലഗംഗാധര തിലക് **4.** ലാലാ ലജ്പത്റായ്
    5. മഹാത്മാഗാന്ധി 6. ബിപിൻ ചന്ദ്രപാൽ 7. ദാദാബായ് നവ്റോജി

    A. മിതവാദികൾ (2, 5, 7) തീവ്രവാദികൾ (1, 3, 4, 6)
    B. മിതവാദികൾ (3, 4, 6) തീവ്രവാദികൾ (1, 2, 5, 7)
    C. മിതവാദികൾ (7, 2, 1) തീവ്രവാദികൾ (4, 5, 7, 2)
    D. മിതവാദികൾ (3, 2, 5) തീവ്രവാദികൾ (2, 4, 6, 1)

20. താഴെ തന്നിരിക്കുന്ന ലോക ഭൂപടത്തിൽ X എന്ന് അടയാളപ്പെടുത്തിയിരിക്കുന്നത് ഏതു വെങ്കലയുഗ സംസ്കാരത്തിന്റെ പ്രദേശമാണ്.

    A. ഹാരപ്പൻ B. ചൈനീസ് C. ഈജിപ്ഷ്യൻ D. മെസപ്പൊട്ടേമിയൻ

21. മിക്ക പ്രാചീന സംസ്ക്കാരങ്ങളുടേയും ഉറവിടങ്ങൾ നദീതീരങ്ങളിലായിരുന്നു. ഇതിൽ നിന്നും മനസ്സിലാവുന്നതെന്ത്?
    A. ആധുനിക സൗകര്യങ്ങൾ നദീതീരങ്ങളിൽ ലഭ്യമായിരുന്നു
    B. അന്യ രാജ്യങ്ങളിലേക്ക് പോകുവാൻ കപ്പലുകളെ ആശ്രയിച്ചിരുന്നു

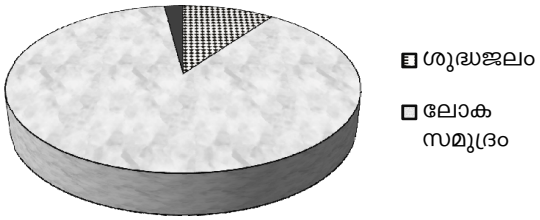
C. നദീതീരങ്ങളിൽ ശുദ്ധജല ലഭ്യതയും മണ്ണിന്റെ ഫലഭൂയിഷ്ഠതയും ഉണ്ടായിരുന്നു.

D. സാമൂഹ്യ ജീവിതത്തിനുള്ള സൗകര്യങ്ങളുണ്ടായിരുന്നു

22. ഭൂപടത്തിൽ കാണിച്ചിരിക്കുന്ന ഹാരപ്പൻ സംസ്കാര കേന്ദ്രമായ ലോഥൽ ഇപ്പോൾ ഏത് സംസ്ഥാനത്തിലാണ് സ്ഥിതി ചെയ്യുന്നത്?

A. ഗുജറാത്ത് B. മഹാരാഷ്ട്ര C. രാജസ്ഥാൻ D. മധ്യപ്രദേശ്

23. താഴെ കൊടുത്തിരിക്കുന്ന പൈഡൈഗ്രം പ്രധാന ജലവിഭവ സ്രോതസ്സുകളുടെ അളവ് കാണിക്കുന്നു ഡയഗ്രം വിശകലനം ചെയ്ത് ശുദ്ധജലത്തിന്റെ സ്ഥാനം കണ്ടെത്തുക?

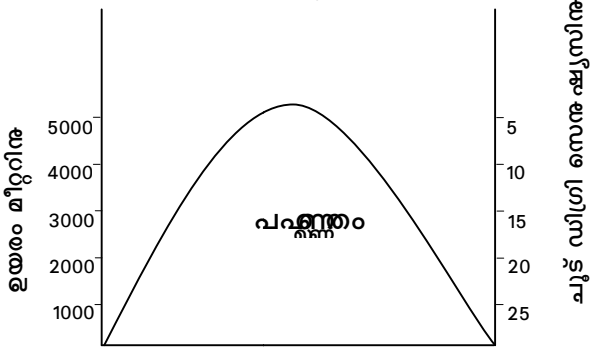


A. ഒന്ന് B. രണ്ട് C. മൂന്ന് D. നാല്

24. ഒരു പ്രദേശത്ത് ഒരു ദിവസം അനുഭവപ്പെട്ട കൂടിയ താപനില 32^0C ഉം കുറഞ്ഞ താപനില 22^0C ഉം ആണെങ്കിൽ അവിടുത്തെ ദൈനംദിന ശരാശരി ഊഷ്മാവ് എത്ര?

A. 25^0C B. 27^0C C. 23^0C D. 26^0C

25. ഉയരവും താപ വ്യതിയാനവും സൂചിപ്പിററുങ്ക ഒരു രേഖാചിത്രമാണ് താഴെ കൊടുത്തി രിററുങ്ക ത്. അവ സസൂക്ഷ്മം വിശകലനം ചെയ്തശേഷം നിഗ്ഗ ളുടെ കണ്ടെത്തനു വിശദമാററുക?



A. ഉയരം കൂടുങ്ക തിനനുസരിണ്ൻതാപം കുറയുങ്ക ു.

B. ഉയരം കൂടുങ്ക തിനനുസരിണ്ൻതാപം കൂടുങ്ക ു.

C. ഉയരം കുറയുങ്ക ു താപം കുറയുങ്ക ു

D. ഒരു മാറ്റവും സംഭവിററുങ്ക ിസ്റ്റ

26. താഴെ തന്നിരിക്കുന്ന ബ്രിട്ടീഷ് ഇന്ത്യ ഭൂപടത്തിൽ അടയാളപ്പെടുത്തിയത് എന്തിനെ സൂചിപ്പിക്കുന്നു?

A. സൂറത്ത് പിളർപ്പ്
B. ബ്രിട്ടീഷ്-ഇട്ട ്യാ തലത്ത ാനം
C. ബംഗാൾ വിഭജനം
D. വാഗൺ ട്രാജഡി പ്രദേശം

27. താഴെ പറയുന്നവയിൽ ശരിയല്ലാത്ത പ്രസ്താവന കണ്ടെത്തുക

A. തുടർന്നായ അമ്ലമഴ ജലമലിനീകരണത്തിനിടയാറുക ു
B. അമ്ലമഴ കുടിവെള്ളത്തിലെ ദോഷകരമായി ബാധിറുക ിസ്റ്റ
C. ചെടികളുടെ വളർച്ചമുരടിപ്പിറുക ു
D. കാർഷിക മേഖല തകർറുക ു

28. റിസർവ്വ് ബാങ്കിനെക്കുറിച്ചുള്ള ശരിയായ പ്രസ്താവനകൾ വേർ തിരിക്കുക

1. ഇന്ത്യയിലെ കേന്ദ്ര ബാങ്കാണ് ഭാരതീയ റിസർവ്വ് ബാങ്ക്
2. ഒരു രൂപ നോട്ട് റിസർവ്വ് ബാങ്ക് അച്ചടിക്കാറുണ്ട്
3. മുംബൈ ആസ്ഥാനമാക്കിയാണ് റിസർവ്വ് ബാങ്ക് പ്രവർത്തിക്കുന്നത്
4. പണത്തിന്റെ വ്യാപാരവിനിമയ കാര്യങ്ങളിലും ദേശീയ കരുതൽ ധനത്തിനും റിസർവ്വ് ബാങ്കിന് സ്വാധീനമില്ല.

A. (1, 2) B. (3, 4) C. (1, 3) D. (2, 4)

29. താഴെ കൊടുത്തിരിക്കുന്ന ലക്ഷ്യങ്ങൾ ഇന്ത്യൻ നാഷണൽ കോൺഗ്രസ്സിന്റേതാണ്. കൂടാതെ മറ്റു ലക്ഷ്യങ്ങൾകൂടി താഴെ തന്നിരിക്കുന്നു. അവയിൽ ശരിയായവ തിരഞ്ഞെടുക്കുക.

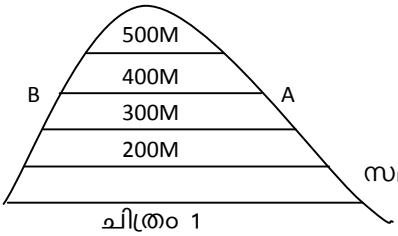
a) രാജ്യത്തിന്റെ വിവിധ ഭാഗങ്ങളിലുള്ള രാഷ്ട്രീയ പ്രവർത്തകർക്കിടയിൽ സൗഹൃദം സ്ഥാപിക്കുക
b) ജാതി മതങ്ങൾക്കപ്പുറം ദേശീയ ഐക്യം വളർത്തുക

<u>മറ്റു ലക്ഷ്യങ്ങൾ</u>

1. പൊതുജനാഭിപ്രായം സംഘടിപ്പിക്കുക
2. ബ്രിട്ടീഷ് ഭരണത്തോട് അമിത വിശ്വാസം പ്രകടിപ്പിക്കുക
3. ജനങ്ങളുടെ ആവശ്യം ബ്രിട്ടീഷ് ഗവൺമെന്റിനു മുൻപിൽ അവതരിപ്പിക്കുക
4. ബ്രിട്ടീഷുകാരുടെ വിശ്വാസം നേടിയെടുക്കുക

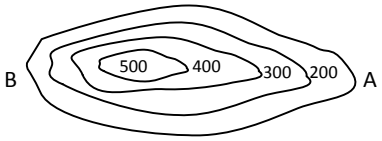
A. (2, 4) B. (1, 4) C. (1, 3) D. (1, 2)

30.



സമുദ്ര നിരപ്പ്

ചിത്രം 1



ചിത്രം 2

ചിത്രം ഒന്നിൽ ബി വശത്തുള്ള കുത്തനെയുള്ള ചരിവിനെ കോണ്ടൂർ രേഖകൾ അടുത്തുവരുന്നതായും എ വശത്തുള്ള ചരിവ് കോണ്ടൂർ രേഖകൾ അകന്ന് വരച്ചതായും കാണുന്നു. ഇതിൽ നിന്നും കണ്ടെത്തിയ നിഗമനത്തെ വേർതിരിക്കുക.

A. കോണ്ടൂർ രേഖകൾ തമ്മിലുള്ള അകലം കുറയുമ്പോൾ കുന്നിന്റെ ചെരിവ് കുറയുന്നു

B. കോണ്ടൂർ രേഖകൾ തമ്മിലുള്ള അകലം കുറയുമ്പോൾ കുന്നിന്റെ ചെരിവ് കുത്തനെയാകുന്നു.

C. കോണ്ടൂർ രേഖകൾ തമ്മിലുള്ള അകലം കുന്നിന്റെ ചരിവിനെ സ്വാധീനിക്കുന്നില്ല

D. പ്രത്യേകം മാറ്റങ്ങളൊന്നും ഉണ്ടാകുന്നില്ല

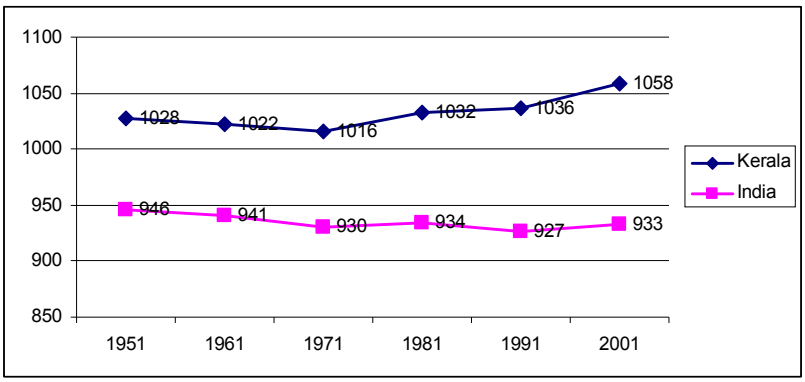
31. താഴെ കൊടുത്തിരിക്കുന്ന പ്രസ്താവനകൾ ഏതു കാലഘട്ടത്തെക്കുറിച്ചുള്ളതാണ്?

1. കൃഷിയുടെ ആരംഭം
2. കാലി വളർത്തൽ
3. വായ്ത്തല മൂർച്ച കൂട്ടിയ ശിലായുധങ്ങൾ
4. പരുക്കൻ കളിമൺ പാത്രങ്ങൾ
5. സാമൂഹിക ജീവിതത്തിന്റെ ആരംഭം

A. പ്രാചീന ശിലായുഗം B. നവീനശിലായുഗം

C. മധ്യശിലായുഗം D. പ്ലീസ്റ്റോസിൻ

32. താഴെ തന്നിരിക്കുന്ന ഗ്രാഫിൽ ഇന്ത്യയുടെയും കേരളത്തിന്റേയും സ്ത്രീ പുരുഷ അനുപാതം തന്നിരിക്കുന്നു. ഇതിലെ പൊതു നിഗമനം കണ്ടെത്തി എഴുതുക



A. ഇന്ത്യയിലെ മറ്റു സംസ്ഥാനങ്ങളെ അപേക്ഷിച്ച് കേരളത്തിൽ പുരുഷ ജനസംഖ്യ കൂടുതലാണ്.

B. ഇന്ത്യയിൽ പുരുഷന്മാർ കൂടുതലുള്ളപ്പോൾ കേരളത്തിൽ സ്ത്രീകൾ കൂടുതലാണ്

C. ഇന്ത്യയിലേയും കേരളത്തിലേയും സ്ത്രീ പുരുഷ അനുപാതം തുല്യമാണ്

D. ഒരു നിഗമനവും പ്രകടമല്ല.

Appendix IV

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

EMOTIONAL REGULATION SCALE

FINAL

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

Directions:- Following statements are related to Emotional Regulation. mark your responses based on how much you agree or disagree. Each statement has given five types of answers. A) Strongly Agree B) Agree C) Undecided D) Disagree E) Strongly Disagree. Read all statements carefully and most suitable one is to be selected and give a tick (✓) mark against the choice. Please do not leave any items. Your responses will be kept in confidential and used only for research purpose.

Sl. No.	Statement	A	B	C	D	E
1.	I think I am to blame to all my problems					
2.	I think I am the responsible person to all the occurrence in my life					
3.	I often think that I have infringed					
4.	I think the basic cause of my problem is in me					
5.	I think I have to accept what are happened in my life.					
6.	I think I have to accept the situations					
7.	I think I cannot change the matters that are happened					
8.	I think I can cope with changes in my life					
9.	I think I have to assimilate the occurrences with reality					
10.	I concerned about of my misfortunes					
11.	I do think I have to understand why it is happened in my life.					

Sl. No.	Statement	A	B	C	D	E
12.	I do go ahead having evaluated my state					
13.	I do evaluate how do the experiences affect me					
14.	I usually think many good things other than happened things					
15.	Other than the adverse happened to me, I think about the better things					
16.	Eventhough I have to do nothing I do think the happier things					
17.	When something happened, I do think about the happier things not related to the occurrence					
18.	I do think about the things a can do better					
19.	I do think how to cope with situation better					
20.	I do think how to change in situation					
21.	In new situation I do think about the good things that I can do					
22.	I do plan to do the things better					
23.	I can learn many things from the situation					
24.	I can become a powerful person from the situation					
25.	I do think, there are many advantages in surroundings					
26.	I do think by the situations help me to understand many more things					
27.	If something happened, I am relieved thinking that things could have been happened worse than this one					
28.	When any misfortune happened, I think others are living through worse than this one					
29.	Comparing the occurrences, I do think mine are simple than others					
30.	I myself remember in life there are worse things than this					
31.	I do think, I am relieved simplifying the occurrence					
32.	I usually think, my things are the worse than others.					

Sl. No.	Statement	A	B	C	D	E
33.	I do think, my experience are dreadful					
34.	I worry thinking about my misfortune is the biggest catastrophe happening in individuals					
35.	I do think all situations are much dreadful					
36.	When an experience happened, I do think this is the worst experience in my life					
37.	I think in worst thing I blame others					
38.	When something happened, I think the others are the responsible					
39.	I do think the others are the cause of my problem					
40.	If something happened, I accused it is because of others incapability					

Name of the Student: Gender: Male/ Female

Age: Locale: Urban/Rural

Name of the School: Management: Aided/Unaided/Govt.

Educational Qualification of Parents: Income of Parent:

Appendix III

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

EMOTIONAL REGULATION SCALE

FINAL

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

നിർദ്ദേശങ്ങൾ:– താഴെ കൊടുത്തിരിക്കുന്ന പ്രസ്താവനകൾ വൈകാരികനിയന്ത്രണവുമായി ബന്ധപ്പെട്ടതാണ്. ഇവയുമായി താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു അഥവാ വിയോജിക്കുന്നു എന്ന് ഇനി പറയും പ്രകാരം രേഖപ്പെടുത്തുക. ഓരോ പ്രസ്ഥാവനക്കും അഞ്ചു രീതിയിലുള്ള ഉത്തരങ്ങൾ കൊടുത്തിരിക്കുന്നു. (**A**) ശക്തിയായി യോജിക്കുന്നു (**B**) യോജിക്കുന്നു (**C**) വ്യക്തമായ ഉത്തരമില്ല (**D**) വിയോജിക്കുന്നു (**E**) ശക്തിയായി വിയോജിക്കുന്നു എന്നിങ്ങനെ സൂചിപ്പിക്കുന്നു. ഓരോ പ്രസ്താവനയും ശ്രദ്ധാപൂർവ്വം വായിച്ചതിനുശേഷം നിങ്ങളുടെ ഉത്തരത്തിന് നേരെ ശരി '✓' അടയാളമിടുക. ദയവായി ഒരു പ്രസ്താവനയും വിട്ടുകളയരുത്. നിങ്ങളുടെ ഉത്തരങ്ങൾ രഹസ്യമായി സൂക്ഷിക്കുന്നതും ഗവേഷണാവശ്യത്തിനുമാത്രം ഉപയോഗപ്പെടുത്തുന്നതുമാണ്.

Sl. No.	Statement	A	B	C	D	E
1.	എന്റെ എല്ലാ പ്രശ്നങ്ങൾക്കും എന്നെ തന്നെയാണ് കുറ്റപ്പെടുത്തേണ്ടതെന്ന് ഞാൻ കരുതാറുണ്ട്.					
2.	എന്റെ ജീവിതത്തിൽ എന്ത് സംഭവിച്ചാലും അതിന് ഉത്തരവാദി ഞാൻ തന്നെയാണ്.					
3.	പലപ്പോഴും എനിക്ക് വീഴ്ചകൾ പറ്റിയതായി ഞാൻ കരുതാറുണ്ട്.					
4.	അടിസ്ഥാനപരമായ പ്രശ്നകാരണം എന്റെയുള്ളിൽതന്നെയാണെന്ന് ഞാൻ കരുതാറുണ്ട്.					
5.	സംഭവിച്ചതെല്ലാം അംഗീകരിക്കണം എന്ന് ഞാൻ വിചാരിക്കാറുണ്ട്.					
6.	സാഹചര്യങ്ങളെ അംഗീകരിക്കണമെന്ന് ഞാൻ വിചാരിക്കാറുണ്ട്.					
7.	സംഭവിച്ച കാര്യത്തിൽ എന്നെക്കൊണ്ട് മാറ്റങ്ങളൊന്നും വരുത്താൻ കഴിയില്ലെന്ന് ഞാൻ കരുതാറുണ്ട്.					
8.	മാറ്റങ്ങളുമായി പൊരുത്തപ്പെട്ട് ജീവിക്കാൻ എനിക്ക് കഴിയാറുണ്ട്.					

Sl. No.	Statement	A	B	C	D	E
9.	സംഭവിച്ചതിനെ യാഥാർത്യ ബോധത്തോടെ ഉൾക്കൊള്ളണം എന്ന് കരുതാറുണ്ട്.					
10.	എനിക്കുണ്ടാകുന്ന ദുരനുഭവങ്ങളെക്കുറിച്ച് ഞാൻ ആകുലപ്പെടാറുണ്ട്.					
11.	പല അനുഭവങ്ങളുമുണ്ടാകുമ്പോഴും എന്തുകൊണ്ടാണ് ചില തരത്തിൽ അത് എന്നെ ബാധിച്ചത് എന്നതിനെക്കുറിച്ച് മനസിലാക്കണം എന്ന് വിചാരിക്കാറുണ്ട്.					
12.	പല സംഭവങ്ങളിലും എന്റെ അവസ്ഥ എന്തായിരുന്നു എന്ന് വിലയിരുത്തി മുന്നോട്ടു പോകാറുണ്ട്.					
13.	പല അനുഭവങ്ങളും എന്നെ എങ്ങനെ ബാധിച്ചു എന്നതിനെക്കുറിച്ച് വിലയിരുത്താറുണ്ട്.					
14.	സഭവിച്ചതല്ലാതെ മറ്റു പല നല്ല കാര്യങ്ങളെക്കുറിച്ചുമാണ് ഞാൻ ചിന്തിക്കാറുള്ളത്.					
15.	എനിക്കുണ്ടായ മോശം അനുഭവങ്ങളേക്കാൾ കൂടുതൽ നല്ല കാര്യങ്ങളെക്കുറിച്ചാണ് ചിന്തിക്കാറുള്ളത്.					
16.	ചില കാര്യത്തിൽ എനിക്കൊന്നും ചെയ്യാനില്ലെങ്കിൽപോലും സന്തോഷകരമായ കാര്യങ്ങളെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
17.	ദുരനുഭവമുണ്ടാവുമ്പോൾ അതുമായി ബന്ധമില്ലാത്ത സന്തോഷകരമായ കാര്യങ്ങളെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
18.	എനിക്ക് നന്നായി ചെയ്യാൻ കഴിയുന്ന കാര്യങ്ങളെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറുണ്ട്.					
19.	എങ്ങനെ ഒരു സാഹചര്യവുമായി നന്നായി പൊരുത്തപ്പെട്ടുപോകാം എന്നതിനെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
20.	എങ്ങനെ ഒരു സാഹചര്യത്തിൽ മാറ്റം വരുത്താം എന്നതിനെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറുണ്ട്.					
21.	പുതിയ സാഹചര്യങ്ങളിൽ തനിക്ക് ചെയ്യാൻ കഴിയുന്ന നല്ല കാര്യങ്ങളെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
22.	ഏതൊരു കാര്യവും നന്നായി ചെയ്യുന്നതിനായി ആസൂത്രണം ചെയ്യാറുണ്ട്.					
23.	സാഹചര്യങ്ങളിൽ നിന്ന് എനിക്ക പലതും പഠിക്കാൻ കഴിയാറുണ്ട്.					
24.	സാഹചര്യങ്ങളിൽ നിന്ന് എനിക്ക് ഒരു ശക്തിയുള്ള വ്യക്തിയാവാൻ കഴിയാറുണ്ട്.					
25.	സാഹചര്യങ്ങൾക്ക് ഗുണകരമായ വശങ്ങളുണ്ടെന്ന് ഞാൻ ചിന്തിക്കാറുണ്ട്.					

Sl. No.	Statement	A	B	C	D	E
26.	കൂടുതൽ കാര്യങ്ങൾ മനസിലാക്കാൻ സാഹചര്യങ്ങൾ ഇടയാക്കിയെന്ന് ചിന്തിക്കാറുണ്ട്.					
27.	എന്തെങ്കിലും സംഭവിച്ചാൽ ഇതിനെക്കാളും മോശമായും കാര്യങ്ങൾ സംഭവിക്കാമായിരുന്നല്ലോ എന്ന് വിചാരിച്ച് സമാധാനിക്കാറുണ്ട്.					
28.	ദുരനുഭവമുണ്ടാകുമ്പോൾ മറ്റുള്ളവർ ഇതിനെക്കാളും വലിയ മോശം അനുഭവങ്ങളിലൂടെ കടന്നു പോകുന്നുണ്ടെന്ന് ചിന്തിക്കാറുണ്ട്.					
29.	മറ്റു കാര്യങ്ങളെ താരതമ്യം ചെയ്ത് ഉണ്ടായ അനുഭവം ചെറുതാണെന്ന് ചിന്തിക്കാറുണ്ട്.					
30.	ഇതിലും മോശമായ കാര്യങ്ങൾ ജീവിതത്തിൽ ഉണ്ട് എന്ന് ഞാൻ സ്വയം ഓർമപ്പെടുത്താറുണ്ട്.					
31.	സംഭവിച്ചതിനെ ലഘുവായിക്കണ്ട് സമാധാനിക്കണമെന്ന് കരുതാറുണ്ട്.					
32.	മറ്റുള്ളവരുടെ അനുഭവങ്ങളേക്കാൾ വളരെ മോശം അനുഭവങ്ങളാണ് എനിക്കുള്ളതെന്ന് എപ്പോഴും കരുതാറുണ്ട്.					
33.	എന്റെ അനുഭവങ്ങൾ എത്ര ഭീകരമാണെന്ന് ഞാൻ വിചാരിക്കാറുണ്ട്.					
34.	ഒരു വ്യക്തിക്കുണ്ടാകുന്നതിൽ വെച്ചേറ്റവും ദാരുണമായ അനുഭവമാണ് എനിക്കുണ്ടായതെന്ന് ചിന്തിച്ച് വിഷമിക്കാറുണ്ട്.					
35.	ഓരോ സാഹചര്യങ്ങളും എത്ര ഭീകരമാണെന്ന് ഞാൻ ചിന്തിക്കാറുണ്ട്.					
36.	ഓരോ അനുഭവമുണ്ടാവുമ്പോഴും ഏറ്റവും മോശമായ അനുഭവമാണ് എനിക്കുണ്ടായതെന്ന് ഞാൻ കരുതാറുണ്ട്.					
37.	ഒരു മോശം കാര്യമുണ്ടായാൽ അത് മറ്റുള്ളവരുടെ കുറ്റം കൊണ്ടാണെന്ന് ചിന്തിക്കാറുണ്ട്.					
38.	എന്തെങ്കിലും കാര്യം ഉണ്ടായാൽ അതിന്റെ ഉത്തരവാദിത്വം മറ്റുള്ളവർക്കാണെന്ന് കുറ്റപ്പെടുത്താറുണ്ട്.					
39.	മറ്റുള്ളവരാണ് പ്രശ്നകാരണം എന്ന് എനിക്ക് തോന്നാറുണ്ട്.					
40.	എന്തെങ്കിലും സംഭവിച്ചാൽ അത് മറ്റുള്ളവരുടെ കഴിവില്ലായ്മ കൊണ്ടാണെന്ന് കുറ്റപ്പെടുത്താറുണ്ട്.					

Name of the Student: Gender: Male/ Female

Age: Locale: Urban/Rural

Name of the School: Management: Aided/Unaided/Govt.

Educational Qualification of Parents: Income of Parent:

Appendix II

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

EMOTIONAL REGULATION SCALE

DRAFT

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

Directions:- Following statements are related to Emotional Regulation. mark your responses based on how much you agree or disagree. Each statement has given five types of answers. A) Strongly Agree B) Agree C) Undecided D) Disagree E) Strongly Disagree. Read all statements carefully and most suitable one is to be selected and give a tick (✓) mark against the choice. Please do not leave any items. Your responses will be kept in confidential and used only for research purpose.

Sl. No.	Statement	A	B	C	D	E
1.	I think I am to blame to all my problems					
2.	I think I am the responsible person to all the occurrence in my life					
3.	I often think that I have infringed					
4.	I think the basic cause of my problem is in me					
5.	If something happened, I think it is because of my ina-bility					
6.	I think myself is the cause of my problem					
7.	I think I have to accept what are happened in my life.					
8.	I think I have to accept the situations					
9.	I think I cannot change the matters that are happened					
10.	I think I can cope with changes in my life					
11.	I can't affable immediately with occurrences.					

Sl. No.	Statement	A	B	C	D	E
12.	I think I have to assimilate the occurrences with reality					
13.	I concerned about of my misfortunes					
14.	I do think I have to understand why it is happened in my life.					
15.	I do go ahead having evaluated my state					
16.	I think I can face favourable and unfavourable situations					
17.	I do evaluate how do the experiences affect me					
18.	I usually think many good things other than happened things					
19.	Other than the adverse happened to me, I think about the better things					
20.	I don’t worry thinking about the adverse things					
21.	Eventhough I have to do nothing I do think the happier things					
22.	When something happened, I do think about the happier things not related to the occurrence					
23.	I do think about the things a can do better					
24.	I do think how to cope with situation better					
25.	I do think how to change in situation					
26.	In new situation I do think about the good things that I can do					
27.	I do plan to do the things better					
28.	I don’t try to pre plan to do the things better					
29.	I can learn many things from the situation					
30.	I can become a powerful person from the situation					
31.	I do think, there are many advantages in surroundings					
32.	I only think about the advantages of things					
33.	I do think by the situations help me to understand many more things					

Sl. No.	Statement	A	B	C	D	E
34.	If something happened, I am relieved thinking that things could have been happened worse than this one					
35.	When any misfortune happened, I think others are living through worse than this one					
36.	If something bad happens, I am relieved thinking things had been happened only this much					
37.	Comparing the occurrences, I do think mine are simple than others					
38.	I myself remember in life there are worse things than this					
39.	I do think, I am relieved simplifying the occurrence					
40.	I usually think, my things are the worse than others.					
41.	I do think, my experience are dreadful					
42.	I worry thinking about my misfortune is the biggest catastrophe happening in individuals					
43.	I do think the occurred experience in my life are worse					
44.	I do think all situations are much dreadful					
45.	When an experience happened, I do think this is the worst experience in my life					
46.	I think in worst thing I blame others					
47.	When something happened, I think the others are the responsible					
48.	I do think the others are the cause of my problem					
49.	If something happened, I accused it is because of others incapability					
50.	I accused the basic reason of problem is in others					
51.	In all things I do think about others mistakes					

Name of the Student: Gender: Male/ Female

Age: Locale: Urban/Rural

Name of the School: Management: Aided/Unaided/Govt.

Educational Qualification of Parents: Income of Parent:

Appendix I

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UNIVERSITY OF CALICUT

EMOTIONAL REGULATION SCALE

DRAFT

Dr. P.K. Aruna
Professor & Head

Muhammed Haris. C
Research Scholar

നിർദ്ദേശങ്ങൾ:- താഴെ കൊടുത്തിരിക്കുന്ന പ്രസ്താവനകൾ വൈകാരികനിയന്ത്രണവുമായി ബന്ധപ്പെട്ടതാണ്. ഇവയുമായി താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു അഥവാ വിയോജിക്കുന്നു എന്ന് ഇനി പറയും പ്രകാരം രേഖപ്പെടുത്തുക. ഓരോ പ്രസ്ഥാവനക്കും അഞ്ചു രീതിയിലുള്ള ഉത്തരങ്ങൾ കൊടുത്തിരിക്കുന്നു. (**A**) ശക്തിയായി യോജിക്കുന്നു (**B**) യോജിക്കുന്നു (**C**) വ്യക്തമായ ഉത്തരമില്ല (**D**) വിയോജിക്കുന്നു (**E**) ശക്തിയായി വിയോജിക്കുന്നു എന്നിങ്ങനെ സൂചിപ്പിക്കുന്നു. ഓരോ പ്രസ്താവനയും ശ്രദ്ധാപൂർവ്വം വായിച്ചതിനുശേഷം നിങ്ങളുടെ ഉത്തരത്തിന് നേരെ ശരി '✓' അടയാളമിടുക. ദയവായി ഒരു പ്രസ്താവനയും വിട്ടുകളയരുത്. നിങ്ങളുടെ ഉത്തരങ്ങൾ രഹസ്യമായി സൂക്ഷിക്കുന്നതും ഗവേഷണാവശ്യത്തിനുമാത്രം ഉപയോഗപ്പെടുത്തുന്നതുമാണ്.

Sl. No.	Statement	A	B	C	D	E
1.	എന്റെ എല്ലാ പ്രശ്നങ്ങൾക്കും എന്നെ തന്നെയാണ് കുറ്റപ്പെടുത്തേണ്ടതെന്ന് ഞാൻ കരുതാറുണ്ട്.					
2.	എന്റെ ജീവിതത്തിൽ എന്ത് സംഭവിച്ചാലും അതിന് ഉത്തരവാദി ഞാൻ തന്നെയാണ്.					
3.	പലപ്പോഴും എനിക്ക് വീഴ്ചകൾ പറ്റിയതായി ഞാൻ കരുതാറുണ്ട്.					
4.	അടിസ്ഥാനപരമായ പ്രശ്നകാരണം എന്റെയുള്ളിൽതന്നെയാണെന്ന് ഞാൻ കരുതാറുണ്ട്.					
5.	എന്തെങ്കിലും സംഭവിച്ചാൽ എന്റെ കഴിവുകേടുകൊണ്ടുണ്ടായതാണെന്ന് കരുതാറുണ്ട്.					
6.	ഞാനാണ് പ്രശ്നകാരണം എന്ന് എനിക്ക് തോന്നാറുണ്ട്.					
7.	സംഭവിച്ചതെല്ലാം അംഗീകരിക്കണം എന്ന് ഞാൻ വിചാരിക്കാറുണ്ട്.					
8.	സാഹചര്യങ്ങളെ അംഗീകരിക്കണമെന്ന് ഞാൻ വിചാരിക്കാറുണ്ട്.					

Sl. No.	Statement	A	B	C	D	E
9.	സംഭവിച്ച കാര്യത്തിൽ എന്നെക്കൊണ്ട് മാറ്റങ്ങളൊന്നും വരുത്താൻ കഴിയില്ലെന്ന് ഞാൻ കരുതാറുണ്ട്.					
10.	മാറ്റങ്ങളുമായി പൊരുത്തപ്പെട്ട് ജീവിക്കാൻ എനിക്ക് കഴിയാറുണ്ട്.					
11.	സംഭവിച്ച കാര്യങ്ങളോട് പെട്ടെന്ന് തന്നെ ഇണങ്ങിച്ചേരാൻ എനിക്ക് സാധിക്കാറില്ല.					
12.	സംഭവിച്ചതിനെ യാഥാർത്യ ബോധത്തോടെ ഉൾക്കൊള്ളണം എന്ന് കരുതാറുണ്ട്.					
13.	എനിക്കുണ്ടാകുന്ന ദുരനുഭവങ്ങളെക്കുറിച്ച് ഞാൻ ആകുലപ്പെടാറുണ്ട്.					
14.	പല അനുഭവങ്ങളുമുണ്ടാകുമ്പോഴും എന്തുകൊണ്ടാണ് ചില തരത്തിൽ അത് എന്നെ ബാധിച്ചത് എന്നതിനെക്കുറിച്ച് മനസിലാക്കണം എന്ന് വിചാരിക്കാറുണ്ട്.					
15.	പല സംഭവങ്ങളിലും എന്റെ അവസ്ഥ എന്തായിരുന്നു എന്ന് വിലയിരുത്തി മുന്നോട്ടു പോകാറുണ്ട്.					
16.	നല്ലതും ചീത്തയുമായ സാഹചര്യങ്ങളെ അഭിമുഖീകരിക്കുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
17.	പല അനുഭവങ്ങളും എന്നെ എങ്ങനെ ബാധിച്ചു എന്നതിനെക്കുറിച്ച് വിലയിരുത്താറുണ്ട്.					
18.	സഭവിച്ചതല്ലാതെ മറ്റു പല നല്ല കാര്യങ്ങളെക്കുറിച്ചുമാണ് ഞാൻ ചിന്തിക്കാറുള്ളത്.					
19.	എനിക്കുണ്ടായ മോശം അനുഭവങ്ങളേക്കാൾ കൂടുതൽ നല്ല കാര്യങ്ങളെക്കുറിച്ചാണ് ചിന്തിക്കാറുള്ളത്.					
20.	മോശം അനുഭവങ്ങളെകുറിച്ച് കൂടുതൽ ചിന്തിച്ച് വിഷമിക്കാറില്ല.					
21.	ചില കാര്യത്തിൽ എനിക്കൊന്നും ചെയ്യാനില്ലെങ്കിൽപോലും സന്തോഷകരമായ കാര്യങ്ങളെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
22.	ദുരനുഭവമുണ്ടാവുമ്പോൾ അതുമായി ബന്ധമില്ലാത്ത സന്തോഷകരമായ കാര്യങ്ങളെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
23.	എനിക്ക് നന്നായി ചെയ്യാൻ കഴിയുന്ന കാര്യങ്ങളെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറുണ്ട്.					
24.	എങ്ങനെ ഒരു സാഹചര്യവുമായി നന്നായി പൊരുത്തപ്പെട്ടുപോകാം എന്നതിനെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
25.	എങ്ങനെ ഒരു സാഹചര്യത്തിൽ മാറ്റം വരുത്താം എന്നതിനെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറുണ്ട്.					

Sl. No.	Statement	A	B	C	D	E
26.	പുതിയ സാഹചര്യങ്ങളിൽ തനിക്ക് ചെയ്യാൻ കഴിയുന്ന നല്ല കാര്യങ്ങളെക്കുറിച്ച് ചിന്തിക്കാറുണ്ട്.					
27.	ഏതൊരു കാര്യവും നന്നായി ചെയ്യുന്നതിനായി ആസൂത്രണം ചെയ്യാറുണ്ട്.					
28.	കാര്യങ്ങൾ മുൻകൂട്ടി ആസൂത്രണം ചെയ്ത് നന്നായി ചെയ്യാൻ ശ്രമിക്കാറില്ല.					
29.	സാഹചര്യങ്ങളിൽ നിന്ന് എനിക്ക പലതും പഠിക്കാൻ കഴിയാറുണ്ട്.					
30.	സാഹചര്യങ്ങളിൽ നിന്ന് എനിക്ക് ഒരു ശക്തിയുള്ള വ്യക്തിയാവാൻ കഴിയാറുണ്ട്.					
31.	സാഹചര്യങ്ങൾക്ക് ഗുണകരമായ വശങ്ങളുണ്ടെന്ന് ഞാൻ ചിന്തിക്കാറുണ്ട്.					
32.	കാര്യങ്ങളുടെ ഗുണപരമായ വശങ്ങളെക്കുറിച്ച് മാത്രമേ ഞാൻ ചിന്തിക്കാറുള്ളൂ.					
33.	കൂടുതൽ കാര്യങ്ങൾ മനസിലാക്കാൻ സാഹചര്യങ്ങൾ ഇടയാക്കിയെന്ന് ചിന്തിക്കാറുണ്ട്.					
34.	എന്തെങ്കിലും സംഭവിച്ചാൽ ഇതിനെക്കാളും മോശമായും കാര്യങ്ങൾ സംഭവിക്കാമായിരുന്നല്ലോ എന്ന് വിചാരിച്ച് സമാധാനിക്കാറുണ്ട്.					
35.	ദുരനുഭവമുണ്ടാകുമ്പോൾ മറ്റുള്ളവർ ഇതിനെക്കാളും വലിയ മോശം അനുഭവങ്ങളിലൂടെ കടന്നു പോകുന്നുണ്ടെന്ന് ചിന്തിക്കാറുണ്ട്.					
36.	എന്തെങ്കിലും ദുരനുഭവമുണ്ടായാൽ ഇത്രയല്ലേ സംഭവിച്ചുള്ളൂ എന്ന് സമാധാനിക്കാറുണ്ട്.					
37.	മറ്റു കാര്യങ്ങളെ താരതമ്യം ചെയ്ത് ഉണ്ടായ അനുഭവം ചെറുതാണെന്ന് ചിന്തിക്കാറുണ്ട്.					
38.	ഇതിലും മോശമായ കാര്യങ്ങൾ ജീവിതത്തിൽ ഉണ്ട് എന്ന് ഞാൻ സ്വയം ഓർമപ്പെടുത്താറുണ്ട്.					
39.	സംഭവിച്ചതിനെ ലഘുവായിക്കണ്ട് സമാധാനിക്കണമെന്ന് കരുതാറുണ്ട്.					
40.	മറ്റുള്ളവരുടെ അനുഭവങ്ങളേക്കാൾ വളരെ മോശം അനുഭവങ്ങളാണ് എനിക്കുള്ളതെന്ന് എപ്പോഴും കരുതാറുണ്ട്.					
41.	എന്റെ അനുഭവങ്ങൾ എത്ര ഭീകരമാണെന്ന് ഞാൻ വിചാരിക്കാറുണ്ട്.					

Sl. No.	Statement	A	B	C	D	E
42.	ഒരു വ്യക്തിക്കുണ്ടാകുന്നതിൽ വെച്ചേറ്റവും ദാരുണമായ അനുഭവമാണ് എനിക്കുണ്ടായതെന്ന് ചിന്തിച്ച് വിഷമിക്കാറുണ്ട്.					
43.	ഉണ്ടായ അനുഭവം വളരെ മോശമായതാണെന്ന് കരുതാറുണ്ട്.					
44.	ഓരോ സാഹചര്യങ്ങളും എത്ര ഭീകരമാണെന്ന് ഞാൻ ചിന്തിക്കാറുണ്ട്.					
45.	ഓരോ അനുഭവമുണ്ടാവുമ്പോഴും ഏറ്റവും മോശമായ അനുഭവമാണ് എനിക്കുണ്ടായതെന്ന് ഞാൻ കരുതാറുണ്ട്.					
46.	ഒരു മോശം കാര്യമുണ്ടായാൽ അത് മറ്റുള്ളവരുടെ കുറ്റം കൊണ്ടാണെന്ന് ചിന്തിക്കാറുണ്ട്.					
47.	എന്തെങ്കിലും കാര്യം ഉണ്ണ്യായാൽ അതിന്റെ ഉത്തരവാദിത്വം മറ്റുള്ളവർക്കാണെന്ന് കുറ്റപ്പെടുത്താറുണ്ട്.					
48.	മറ്റുള്ളവരാണ് പ്രശ്നകാരണം എന്ന് എനിക്ക് തോന്നാറുണ്ട്.					
49.	എന്തെങ്കിലും സംഭവിച്ചാൽ അത് മറ്റുള്ളവരുടെ കഴിവില്ലായ്മ കൊണ്ടാണെന്ന് കുറ്റപ്പെടുത്താറുണ്ട്.					
50.	അടിസ്ഥാനപരമായി പ്രശ്നങ്ങളുടെ കാരണം നിലകൊള്ളുന്നത് മറ്റുള്ളവരിലാണെന്ന് പഴിക്കാറുണ്ട്.					
51.	ഓരോ കാര്യങ്ങളിലും മറ്റുള്ളവരുടെ തെറ്റുകളെക്കുറിച്ചാണ് ഞാൻ ചിന്തിക്കാറുള്ളത്.					

Name of the Student: Gender: Male/ Female

Age: Locale: Urban/Rural

Name of the School: Management: Aided/Unaided/Govt.

Educational Qualification of Parents: Income of Parent: