EFFECTIVENESS OF INSTRUCTIONAL STRATEGY BASED ON INDIVIDUALIZED SUPPORT PLAN ON ACHIEVEMENT IN SOCIAL SCIENCE OF INTELLECTUALLY CHALLENGED STUDENTS

Thesis

Submitted for the Degree of

DOCTOR OF PHILOSOPHY IN EDUCATION

by

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DECLARATION

I **RANJITHLAL P.K.,** do hereby declare that this thesis entitled as **EFFECTIVENESS OF INSTRUCTIONAL STRATEGY BASED ON INDIVIDUALIZED SUPPORT PLAN ON ACHIEVEMENT IN SOCIAL SCIENCE OF INTELLECTUALLY CHALLENGED STUDENTS** is a genuine record of research work done by me under the supervision of **Dr. HASSAN KOYA M.P.,** Assistant Professor, Farook Training College, Research Centre in Education, University of Calicut, and that no part of the thesis has been presented earlier for the award of any Degree, Diploma and Associateship in any University.

Place: Farook College **RANJITHLAL P.K.**

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Certificate

I **Dr. HASSAN KOYA M P**, do hereby certify that this report "**EFFECTIVENESS OF INSTRUCTIONAL STRATEGY BASED ON INDIVIDUALIZED SUPPORT PLAN ON ACHIEVEMENT IN SOCIAL SCIENCE OF INTELLECTUALLY CHALLENGED STUDENTS"** submitted for the degree of Doctor of Philosophy in Education of the Farook Training College, is a record of bonafide study and research carried out by **Mr. RANJITHLAL P.K**, under my supervision and guidance.

Place: Farook College

Date:

Dr. HASSAN KOYA M.P
(Supervising Teacher)

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Farook Training College **RANJITHLAL P.K**

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

- Need and Significance of the Study
- Statement of the Problem
- Definitions of Key Terms
- Variables for the Study
- Objectives of the Study
- Hypotheses of the Study
- Methodology in Brief
- Scope of the Study
- Delimitations of the Study
- Organisation of the Report

"Realizing the goal of successful education of children with special educational needs is not the task of the Ministries of Education and schools alone. It requires the co-operation of families, and the mobilization of the community and voluntary organizations as well as the support of the public-at-large. Experience from countries or areas that have witnessed progress in equalizing educational opportunities for children and youth with special educational needs suggests several useful lessons." UNESCO (1994)

This message reiterates that education alone can be the salvation for poverty and upliftment of the socially discriminated people including all walks of life. Due to lack of knowledge, different attitude, educational access and technology, children with disability were treated as unwanted and separated from the mainstream.

In the present world, education can no longer function as an agent of dispensing information as more emphasis has to be given to the desirable habits, interests, attitudes, aptitudes and values. So educators of today should take the responsibility of a mentor or scaffolds rather than an instructor. A major shift in the learning process has occurred that is from teacher-centered instruction to student centered instruction. According to Dwivedi (2010), students should be provided opportunities to learn by exploring predicting, reflecting, problem solving and investigating concepts.

In the case of children with Special Needs (CWSN), education aims to capitalize on their potential and facilitate them to become well-adjusted and

well-mannered individuals. Children with special needs, especially those with intellectual disability, acquisition of knowledge can be facilitated through activity oriented learning which is viable through the means of individualized supports. In 1974, a major change in education for the child with disability was achieved with the launch of a comprehensive Integrated Education for the Disabled Child (IEDC). The aim was to provide children with moderate disabilities with both educational facilities and financial support.

The modern era in the history of special education belongs to the era of inclusive settings i.e. educating all types of children irrespective of exceptional or normal together in the regular classes of the mainstream schools. It calls on the part of schools for welcoming the children with all disabilities by getting them adequately equipped in terms of necessary adaptation and means and material supports for their proper education and adjustment. Most of the countries across the world, under the UN initially have enacted legislative laws for making arrangement for the education of the disabled children of their countries by committing to philosophy of inclusive education in their schools. Section 26 of Persons with Disabilities Act (1995) enjoins upon all the appropriate governments and the local authorities to “Ensure that every child with a disability has access to free education in an appropriate environment till he attain the age of eighteen years”.

Constructivist approach should undergo some modification to accommodate children with special needs in the inclusive classroom. But in actual practice many of the children with special needs are excluded in an inclusive setting like children with intellectual disability, autism etc. due to lack

of expertise in adopting innovative strategies in an inclusive setting. West, Taylor, Houghton & Hudyma (2005) opined that lack of individual instruction create greeter impediments for effective inclusion.

As majority of these children with mild and moderate intellectual disability, they don't need a distinct curriculum; rather there should be distinct modes of transacting the curriculum. Students with intellectual disabilities need individualized supports for attaining educational goals. Intellectual disability is a condition where people have significant difficulties in learning and understanding because of incomplete development of intelligence. Their skills in areas like cognition, language, motor and social abilities can be impaired permanently.

People with mild intellectual disability might need some additional education, but can live independently with same support. Any services for people with intellectual disability must be intended to increase their abilities and their inclusion into normal life of society. Education and therapies which facilitate and support development can greatly improve the abilities and independence of people with intellectual disability. Access to inclusive education at school age and beyond increases the abilities of self-care. All the handicapped can be educated with their normal peers as far as possible. It is based on the philosophy of equal educational opportunity that is implemented through individual planning to promote appropriate learning, achievement and social harmonization (Stephens, Blackhurt & Magliocia, 1998).

For people with intellectual disability, accessibility of information is of utmost importance. They need information in easy-to-understand format to lead a successful life in society. Now a day, people with intellectual disability

increasingly claim the right to speak for themselves and to be consulted while taking decision that affects their lives. These democratic principle challenges and changes old models of care and treatment and leads to a full participative of people with intellectual disability in society which will ensure a decent living.

Need and Significance of the Study

Many families and educators strongly stands for mainstreaming students with intellectual disabilities as much as is practical. Mainstreaming implies placing children with disabilities into regular classroom to receive education alongside their non-disabled peers. But most of the students with intellectual disabilities are not mainstreamed. The Kothari Commission (1966) which highlighted the importance of educating children with disabilities expressed that the education of children with disabilities must be a part of the general educational system suggesting that educational facilities must be extended to the deaf, blind, orthopedically handicapped and mentally challenged (Pandey, 2006).

Mainstreaming is an appealing approach but it has both merits and demerits. The main advantage of mainstreaming is that it provides a natural, real-world environment where important life skills can be learned. Many children with intellectual disabilities have inadequate social skills that adversely affect their success in life, but social skills can only be learned in a social environment. Since they are intellectually challenged, they need special supports from authority.

Second, throughout their lives, people with intellectual disabilities will encounter many people who are different from them. A school setting provides

the ideal climate to notice and adjust to these differences. A classroom with Individualized Support Plan can yield better academic performance.

Majority of students with intellectual disabilities are placed in general education classroom even though they may receive special supports. Due to certain misconception, they are often neglected in the classroom. They should be made active participants in the learning process. The present activity based curriculum should be strengthened and additional supports should be given to the mentally challenged students to develop various skills and competencies. But now a days, less emphasis is given for children with special needs, especially for children with intellectual disability. Even in inclusive settings the intellectually challenged students are not getting proper support.

The United Nation Special Rapporteur on Human Rights and Disability Benqt Lindquist put forward the following challenge.

A dominant problem in the disability filed is the lack of access to education for both children and adults with disabilities. As education is a fundamental right for all, enshrined in the Universal Declaration of Human Rights, and protected through various international conventions, this is very serious problem. In a majority of countries, there is a dramatic difference in the educational opportunities provided for non-disabled children. It will simply not be possible to realize the goal of education for all if we do not achieve a complete change in the situation.

The problems faced by mentally challenged students in the class are many. Their span of attention is less when compared to normal students. Teachers are often unable to give special attention to these students due to lack

of time and heavy syllabus. These students find difficulty in learning even simple concepts. Often they fail to achieve the learning tasks properly. Due to various reasons the parents of intellectually challenged students are not in a position to assist them especially in the matter of education. Even though inclusive class rooms are the order of the day most classroom conditions are not favorable to them. They face great difficulty in understanding complex concepts. Lack of confidence, encouragement, learning atmosphere, individualized supports hamper their learning in a great way.

Students with intellectual disability are initially delayed in self-regulation skills, self-discipline, analyzing and reflecting on their own behaviors and actions. Hence pedagogical strategies and individualized supports that explicit the characteristics of students with intellectual disabilities have to be identified and implemented. Although some intervention development studies have been done in this area, it doesn't focus on individualized supports needed by the intellectually challenged students. So there exists a great demand for formulating an individualized support plan for intellectually challenged secondary school students. Most of the studies have tested effectiveness of individualized supports on overall development of the individual but cannot focus on academic outcome measures. Classroom interventions, which specifically target academic under achievement, can be preferably used for solving the academic problem of children with intellectual disability as it can be easily adopted by teachers. So strategies based as classroom interventions should be properly planned and selected by teachers to enhance the achievement of students with intellectual disability effectively. The teacher is the educational change agent (Hargreaves, 2003).

The existing method of instruction shifts students from mere recipients of information to the level of good constructor of knowledge through discussion, experimentation and observation. But most of them failed to develop outcomes like logical reasoning, problem solving, decision making, inter-personal skills, communication and meta cognitive process among children.

Individualized support plan acts as a powerful tool for curriculum transaction in the constructionist frame work to answer most of the issues related to acquisition of skills by students with intellectual disability. It also takes into account the individual differences in the capabilities of intellectually challenged students. Individualized Support Plan (ISP) could develop confidence in students and reasonable decision-making skill in selecting solution for problematic situation in life. The investigator felt the need for identifying suitable strategy for the development of instructional strategy based on ISP for students with intellectual disability. In this context, the theoretical supports and research findings proved that ISP can act as effective instructional strategy which will enhance the academic achievement of students with Intellectual Disability. So in the present study, the investigator has an intension to develop a strategy to improve the achievement of students with Intellectual Disability. So the investigator adopted ISP to improve the academic achievement of students with Intellectual Disability.

The UN Convention on the Rights of Persons with Disabilities which Indian Government has already ratified in October 2007 recognizes the right of persons with disabilities to education. For achieving this right the convention calls upon Member States- inter alia, to ensure that children with disabilities are not

excluded from free and compulsory primary and secondary education on the basis of disability and that they receive ‘effective individualized support measures in environment that maximize academic and social development, consistent with the goal of full inclusion’.

The goal of the ISP is to assess the individual needs and abilities of each person, and to develop a strategy that best utilizes these competencies while eliminating the challenges that cause functional limitations. Ultimately the primary objective of the ISP is to make a match between a person’s environment and their capacities in order to optimize their level of functioning and life situation.

Individualized Support Plan is considered most useful when the design and implementation of the ISP is founded upon a collaborative alliance between the person with an intellectual impairment, his or her family member and an interdisciplinary team of professionals. Accordingly, psychologists and other behavioral specialists, health care providers, educational and skill training specialists, teachers and social workers may participate in the development and implementation of ISP. ‘The Right of children to Free and Compulsory Education Act 2009’ has special significance. It stands for quality educational opportunities to be made available to children with disabilities as well along with necessary infra structural facilities and support services including trained teachers.

Early intervention is crucial in order to ensure the maximum development of children with intellectual disabilities. Intervention strategies are offered beginning as young as birth through two years of age. These early interventions serve several functions: They inform parents and primary care givers about early

child development, they give interventions designed to help children grow and learn by working with their strength and limitations, and they work with families to design and implement ISP's to help their children function to the best of their abilities.

The ISP evaluates the abilities and limitations of the person and determines what educational and academic supports are needed and how to best provide these supports, in the least restrictive environment. Students with Intellectual Disability feel part of a social network, many reported school-related loneliness. General and special educators used same strategies to support students. Results suggested a difference between student's and teacher's choices of preferred social support strategies. (Pavri & Monda-Amaya, L, 2001).

The Kothari Commission (1964 – 66) reported that the education of handicapped children should be an inseparable part of the education system. The commission put forwarded experimentation with integrated programs in order to bring as many children as possible into these programs (Alur, 2002).

Social intellect development of mentally handicapped teenagers is rather low due to biological but mainly social factors connected with unsatisfactory condition of upbringing and educational development, lack of possibilities to satisfy personal social and emotional needs as well as non-forcedness of social abilities (Konovalova, 2016).

The teachers should daily accompany the mentally challenged child, with his many needs, problems, joys and sadness and especially his (or her) daily struggle at school to understand, to learn, and to develop, to finally take his place in society (Ee et al. 2005).

The primacy and exclusivity that exists between paraprofessional and the intellectually challenged students as characterized by four inter connected themes regarding consumer perspectives of paraprofessionals as mother, protector, friend and primary teacher. Implications for practice promote schools to (a) increase teachers involvement (b) consider the social validity of supports (c) include them in decisions about their own supports and (d) highlight the importance of listening to students with disabilities.(Broer, Doyle & Giangreco, 2005).

The District Primary Education Program (DPEP) which laid stress on integration in the areas of teacher training, removing architectural barriers and in providing appropriate aids and did far better but was unable to include a vast majority of children with disabilities in mainstream education (Pandey & Advani, 1995)

Para 48 of the National Policy for Persons with Disabilities emphasize "that every child with disability has access to appropriate pre-school, primary and secondary level of education by 2020". According to a report of the World Bank Disability Group, "Education is widely seen as a means to develop human capital to improve economic performance and to enhance individual capabilities and choices in order to enjoy freedom of citizenship" (Peters, 2003). A World Bank Report (2007) highlighted that 38 percent of the children with disabilities in the age group 6 -13 are out of school.

Singh (2003) pointed out 3 to 4 percent of children with special needs had access to education with or without support services. Inclusive education is defined by UNESCO as a process of addressing and responding to the diverse

needs of all learners by increasing participation in learning and reducing exclusion within and from educational.

Inclusive education refers to 'increasing the participation of students in and reducing their exclusion from the cultures, curricula and communities of local schools' (Booth & Ainscow, 1998). Most educators thought that childrens' physical sensory or intellectual disabilities were so different that they could not participate in the activities of a common school (Advani, 2002)

"Special Education refers to instruction that is specifically designed to meet the needs of exceptional children. It involves designing the physical environment in the class room, teaching procedure, teaching content and equipment for a particular type of disability" (Jangira, 2000).A twenty first century teacher is an educator, one who is an expert in curriculum management, a master of class room management, a skilled practitioner in assessment and evaluation. (Browder, 2001) and above all someone who understands the educational implications of the abilities and disabilities of their students and encourages pupil-centered learning.

In 1997, IEDC (Integrated Education for Disabled Children) was amalgamated with DPEP (Chadha, 2002) and the Sarva Shiksha Abhiyan. The IEDC scheme encourages for a wide range of incentives and interventions for education of children with disabilities. These encompasses pre-school training, counseling for parents, allowances for books, stationary, uniforms, transport, hotel facilities and other adaptive devices.

The Individualized Support Plan creates an opportunity for teachers, parents and students to work together to enhance educational results for children

with disability. Social science is an important category of academic discipline, concerned with society and the relationship among individuals with in the society. It includes different branches like History, Geography, Economics, Civics and Sociology. The important aims of teaching Social Science are: The development of reasoning and critical thinking, attain democratic values, develop International understanding, acquiring knowledge etc.

The American Association on Mental Retardation (AAMR) has developed another widely accepted diagnostic classification for mental retardation. The AAMR focuses on the capabilities of the retarded individual rather than on his or her limitations. The categories describe the level of support required. They are: intermittent support, limited support, extensive support and pervasive support. Meta Analysis of review shows that no study is conducted on Individualized Support Plan to measure effectiveness on Social Science subjects. Besides the effectiveness of ISP among intellectually challenged students will be a promising one in the future years. This prompted the investigator to take up the present study.

Statement of the Problem

Individualized Support Plan for the intellectually challenged is considered to be a threshold area of educational research. Even though this is considered to be an exploring area only limited studies have been conducted in Indian soil. Most of the studies were conducted abroad. Social Science is considered to be a strong foundation course for higher education. Owing to these considerations the investigator has taken up the present study EFFECTIVENESS OF INSTRUCTIONAL STRATEGY BASED ON INDIVIDUALIZED SUPPORT PLAN ON ACHIEVEMENT IN SOCIAL SCIENCE OF INTELLECTUALLY CHALLENGED STUDENTS.

Definitions of Key Terms

Effectiveness

Effectiveness is the capability of producing a desired result or the ability to produce desired output. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression.

The term effectiveness stands for the result of the study when the influence of one factor or the condition is depended on the presence or absence of another factor (Good, 1963).

Effectiveness is the ability to achieve desired results with economy of time and effort in relation to the amount of work accomplished (Good, 1959).

In this study, effectiveness means the ability to produce empirically demonstrated result approved by those in the academic environment upon the learner. Here, effectiveness means the significant difference in achievement in social science through Individualized Support Plan and the prevailing system of Existing Method and is measured in terms of difference between pre-test and post-test scores of experimental and control groups.

Instructional Strategy

Instructional strategy is the technique or method that a teacher can adopt to meet the various learning objectives. The strategy help students to walk on the path of independent learning and become strategic learners. Instructional strategy focus on not only on the educational content but also on the method and environment of the teaching process. It equip teachers to make learning fun and help students to awaken their desire to learn.

In the context of Classroom Instruction research-based Strategies for Increasing Student Achievement, Robert Marzano (2001) and his colleagues identified nine high-yield instructional strategies through a meta-analytic study of over 100 independent studies. Many studies have identified instructional strategies that show positive, measurable effects on student achievement (Taylor, Pearson, Peterson & Rodriguez, 2003). There exists a lot of speculation among the researchers in order to find out the best instructional strategy (Wenglinsky, 2002). It is important to use different types of instructions not only to keep the students' interest but also to allow them to interact with the content in a variety of ways.

Individualized Support Plan (ISP)

ISP is an instructional strategy which provides ample opportunities for students to enhance their educational achievement in an inclusive environment. In the present study ISP is an instructional strategy where different types of supports are given which enhances the achievement of mentally challenged students in social science. ISP's are considered most useful when the design and implementation of ISP is founded upon a collaborative alliance between the person with an intellectual impairment, his or her family members, teachers, resource teacher and an inter disciplinary team of professionals.

The goal of ISP is to assess the individual needs and abilities of each student, and develop a strategy that best utilizes their competencies while climaxing the challenges that cause functional limitations. The main objective of ISP is to make a match between a person's environment and their capabilities in order to maximize their level of functioning and academic achievement. Many

children with intellectual disabilities have inadequate study skills that affect their educational achievement badly. So individualized supports in the form of family supports, economic supports, instructional supports, and social supports will result in achieving educational goals of intellectually challenged students.

Achievement

Achievement is defined by Garrett (1981), as the overall accomplishment that students achieve in a specific course measured by their scores. In this research achievement referred to the outcome of the learning specific units measured by the marks scored by learners in the test in the subject of Social science given to them immediately at the end of teaching units.

Intellectually Challenged Students

Intellectually challenged or intellectual disability is condition where people have significant difficulties in learning and understanding because of incomplete development of intelligence. Pupil with intellectual disability need some additional education and supports which will enhance that achievement in education. Any service for people with intellectual disability must be intended to increase their abilities and their inclusion into normal life of society. Education and therapies which facilitate and support development can greatly improve the abilities and independence of people with intellectual disability. Access to inclusive education at school age and beyond increases the abilities of self-care. For people with intellectual disability accessibility of information is of utmost importance. They need information in easy-to-understand format to lead a successful life in society.

The most widely accepted definition of intellectual disability is given by AAIDD: “intellectual disability (is) characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills. This disability originates before age 18” (AAIDD [AAMR], 2002, P.1)

In the present study Intellectually Challenged Students means educable (mild and moderate) Intellectually Challenged Students studying in secondary School level (Std IX) of Kerala State.

Variables Selected for the Study

Purpose of the study was to find out the effectiveness of instructional strategy based on individualized support plan on achievement in social science among secondary school students with intellectual disability.

The dependent and independent variables selected for the present study are the following.

Dependent Variable

The dependent variable in the present study is

- Achievement in Social Science

Independent Variable

The independent variables for the present study are

- Instructional Strategy based on Individualized Support Plan and
- Existing Method of teaching

Objectives of the Study

The major objectives of the study are to develop an instructional strategy based on Individualized Support Plan (ISP) and to test its effectiveness on the Achievement in Social Science among Intellectually Challenged Secondary School Students. To achieve the major objectives of the study investigator framed a set of specific objectives for the study which are following.

1. To find the perception of teachers on problems, challenges and present situation of Intellectually Challenged Secondary School Students.
2. To compare the mean pre-test score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
3. To compare the mean pre-test score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
4. To compare the mean post-test score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
5. To compare the mean post-test score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.

6. To compare the mean pre-test and post-test scores in achievement in social science of experimental group of Intellectually Challenged Secondary School Students.
7. To compare the mean pre-test and post-test scores of experimental group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
8. To compare the mean pre-test and post-test scores in achievement in social science of control group of Intellectually Challenged Secondary School Students.
9. To compare the mean pre-test and post-test scores of control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
10. To compare the mean gain score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
11. To compare the mean gain score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
12. To compare the mean gain score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.

13. To compare the mean gain score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing when pre test score is taken as co-variate.
14. To find out the effect size of the developed Instructional strategy based on Individualized Support Plan on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

Hypotheses of the Study

1. There is no significant difference in the pretest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
2. There is no significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.
3. There is significant difference in the posttest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
4. There is significant difference in the posttest mean scores between experimental and control groups with regards to objectives of

achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

5. There is significant difference between pretest and posttest mean scores of achievement in social science of the experimental group of Intellectually Challenged Secondary School Students.
6. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the experimental group
7. There is significant difference between pretest and posttest mean scores of achievement in social science of the control group of Intellectually Challenged Secondary School Students.
8. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the control group
9. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
10. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding,

Applying and Analyzing of Intellectually Challenged Secondary School Students.

11. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
12. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
13. The Instructional strategy based on Individualized Support Plan has a very large effect on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

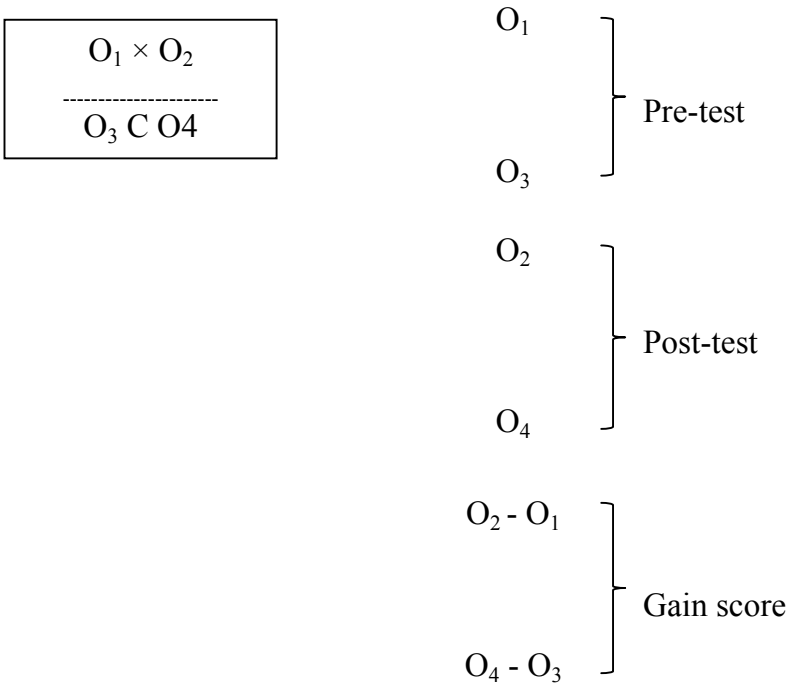
Methodology in Brief

Method used

The present study has been conducted by employing both survey and experimental methods

Design of the study

The Pre-test- Post-test Non-equivalent group design was adopted for the study. The design of the study is illustrated as follows.



X - Exposure of a group to experimental (treatment)

C - Exposure of a group to control condition

O - Observation/test administered

Sample Selected for the Study

The sample of the study consists of 64 intellectually challenged secondary school students and 154 secondary school teachers. 30 intellectually challenged students comprise Experimental group and 34 intellectually challenged students comprise Control Group. The sample for both Experimental and Control Group were selected from 20 secondary schools of Kozhikode district.

Tools used for the Study

The following tools were used for the present study

1. Lesson transcript based on Individualized Support Plan (Ranjithlal & Koya, H.M.P., 2018)

2. Achievement test in social science (Ranjithlal & Koya, H.M.P., 2018)
3. Questionnaire for teachers (Ranjithlal & Koya, H.M.P., 2018)
4. Student Profile (Ranjithlal & Koya, H.M.P., 2018)

Statistical Techniques Used

1. Descriptive statistics
2. Test of significance of mean difference for large independent samples
3. One-tailed test of significance of difference between two means for large dependent groups
4. Analysis of Covariance (ANCOVA)
5. Effect Size (Cohen's *d*)

Scope of the Study

The aim of the present study is to investigate the effectiveness of instructional strategy based on Individualized Support Plan on achievement in social science among students with intellectual disability at secondary school level. Today all public schools provide special services and educational programme for challenged. Teachers are responsible for the academic achievement of students regardless of class placement. Teachers are now encouraged differentiating instructions for a higher level of student ability levels. By emphasizing on variables that can influence student achievement, that is ISP, this study aims to produce research-based evidence to assist educators, legislators and parents in the design, implementation and/or choice of instructional programs that maximize learning and therefore achievement.

To meet rigorous standards, 'exposure' to the general education curriculum has become the jargon and the inclusive schooling movement has

increasingly become the standard used to restructure special education delivery system today. As a result teachers are now urged to differentiate instructions for a greater range of student ability levels.

This study is guided by the principle of providing complimentary knowledge and skills to influence student achievement; general and special education teachers bring a large amount of knowledge and skills to task of teaching and by being paired together, they pool their expertise. According to Luzader (2009) general education teachers have a more in-depth understanding of specific curricula or subject areas being taught, whereas special education teachers generally know more about modifying and breaking down the curriculum and adapting the methodologies to meet the needs of an individual child.

Research studies have shown that strategies like instructional strategy based on individualized supports are effective for students with intellectual disability. ISP can also be used to develop many social skills, overcome peer related problem and academic under achievement. According to a study conducted by Robertson, Chamberlain and Kesari (2007) when teachers have positive perceptions of their relationship with challenged students the behavior problems of challenged were reported to be lesser and the students were more socially included with peers.

Theoretically, setting a strategy in some form shared influence student achievement. Inclusions does not intend the placement of students with disabilities in general education classes rather it means: providing to all students equitable opportunities to receive effective educational services, with the needed supplementary aids and support services, in age-appropriate classes in their

neighborhood schools, in order to prepare students for productive lives as full member of the society. Same strength are whole class inclusive teaching, group/ cooperative/ collaborative learning, activity based learning and team approach/ problem solving.

A study by Fisher Meyer (2002) found that the students aged 6-19, across a range of special education categories, made their greatest gains in inclusive settings where Individualized Education Plan (IEP) objectives are integrated within a general education routine. They pointed out that the academic accomplishments of students with severe disabilities increase through interaction with typically developing peers in an integrated environment and they meet the goals of their Individual Education Programs (IEPs)

The education of the mentally challenged has been accepted slowly in India and Kerala, as an important activity that requires special facilities and adoption of specially prepared curricula and instructional strategies. The effectiveness of individualized support plan, which if found effective, could be introduced into training and education of mentally challenged in Kerala and India. A variety of positive benefits can occur from the use of group methodology including the promotion of observational learning, facilities of over learning and generalization, increased better use of instructional time, more efficient student management and increased disabled and non-disabled peer interaction (Borus, et al., 2003; Johnson, et al., 2004).

Implementing individualized supports in inclusive setting could increase effectiveness of the same. It is well known that every child learns

various skills more efficiently and easily in peer groups. Various kinds of supports will result in the spontaneous development of skills and abilities among the mentally challenged children. Very few studies related to individualized supports are available in the field of intellectually challenged students in India. The study focuses that the strategies for students with Intellectual Disability should include provision for converting their weaknesses into strengths. The study enables teachers to equip the neglected group of children with intellectual disability with socially accepted behavior thus transforming them into a socially accepted group. Students with intellectual disability who always have a passive role in their education get a chance to excel with the help of ISP. Students who usually have lower academic performances were given a chance to express themselves before their peers.

The present study investigated the academic problem of secondary school students with intellectual disability which would be beneficial for the policy makers, curriculum planners and practitioners to frame instructional strategies for secondary school students. It will provide individualized supports and due consideration for students with intellectual disability in their classes. The results of the study will also be significant and likely to provide the input for creating an entirely new teaching-learning program for the intellectually challenged children.

Delimitations of the Study

The study is delimited to 30 students of experimental group and 34 students of control group with intellectual disability, present in the inclusive

class rooms of 20 schools under Kozhikode district in Kerala. The study is limited only to children with mild and moderate intellectual disability enrolled in inclusive schools. It is delimited to IX std students of schools that follow Kerala State Board Syllabus.

The content selected for transaction included topics from Geography only.

In spite of these delimitation, the investigator feels that a sincere effort has been made to study all the important features of the problem as far as possible and believes that findings of this investigation will be useful to include students with intellectual disability in the inclusive class rooms more effectively in the learning process.

Organization of the Report

The report has been presented in five chapters.

Chapter I of the report contains a brief introduction of the problem, need and significance of the study, statement of the problem, definition of the key terms, objectives of the study, hypotheses of the study, methodology in brief, scope and delimitations of the study.

Chapter II includes a brief theoretical overview of the variables, studies related to the variable summary of reviews of related literature.

Chapter III deals with methodology of the study in detail consisting of the variable of the study, tool used for data collection, data collection procedure and statistical techniques used for the analysis of data.

Chapter IV presents statistical analysis of data and discussion of results based on the objectives.

Chapter V gives a summary of the study, tenability of hypotheses, major findings, conclusions, educational implications of the study and some suggestions for further research.

REVIEW OF RELATED LITERATURE

- Theoretical Overview of Intellectually Challenged
- Studies Related to Intellectually Challenged
- Theoretical Overview of Individualized Supports
- Studies Related to Individualized Supports

The review of related literature helps a researcher in getting a profound knowledge to the design of the study. In any research the related literature plays a significant role. Review of related literature is an important part of research work which becomes an important link between the proposed research and the studies already done. It helps an investigator to eliminate the duplication of what has been done and provide helpful suggestions for significant investigation (Best & Khan, 1999).

Review of related literature give the research workers with the methods, subject and significant improvement on his/her own research design. This chapter is divided into two sections- first section presents the theoretical frame work of the related elements of the present study and the second section presents studies conducted in India and abroad. The chapter is organized in the following way.-

Theoretical Overview

In this section, the theoretical overview of intellectual disability and variables under consideration are presented.

Intellectual Disability

"Mental retardation refers to sub overage general intellectual functioning which originates in the developmental period and is associated with impairment in adaptive Behavior" (Heber, 1961). School use a lot of terms to label students with mental retardation, mentally retarded, educationally handicapped, mentally handicapped, severely handicapped and students with significantly limited intellectual capacity.

The 1992 AAMR definition of intellectual disability is as follows:

Mental retardation refers to substantial limitation in present functioning. It is characterized by significantly sub average intellectual functioning, existing concurrently with related limitation in two or more of the following applicable adaptive skill areas: communication, self-care, home-living, social skills, community use, self-direction, health and safety, functional academics, leisure and work. Mental retardation manifests before age 18 (Luckasson et al., 1992, P 1).

The intellectual disability is not necessarily life long, but existence or degree will depend on the provision of appropriate supports. The need for supports will also vary over time for many individuals who meet the criteria of the definition.

Classification in 1992 AAMR definition

Instead of "levels of intellectual disability" this classification is based on the individual's heads for supports. The intensity and pattern of supports system are divided into four levels viz., intermittent, limited, extensive and pervasive.

The patterns of supports needed are based on a thorough assessment of an individual's strengths and weakness and need for supports in the four broad dimension of:

- Intellectual functioning and adaptive skills
- Psychological/emotional considerations
- Physical/health/etiology consideration
- Environmental consideration

(Luckasson et al., 1992, P. 24)

The definitions of the four levels of intensity of supports are as follows:

Intermittent

Supports on an "as needed basis" characterized by episodic nature, person not always needing the supports, or short-term supports needed during life-span transition (e.g. job loss) be high or low intensity when provided.

Limited

An intensity of supports characterized by consistency over time, time-limited but not of an intermittent nature, may require lesser staff members and less cost than more intense levels of support (e.g. transitional supports during the school to adult provided period)

Extensive

Supports characterized by regular involvement (e.g. daily) in at least some environments (such as work or home) and not time limited.

Pervasive

Supports characterized by their consistency, high intensity, provided across environments, potential life-sustaining nature. Pervasive supports involve more staff members and intrusiveness than do extensive or time-limited supports ((Luckasson et al., 1992).

The AAMR 1992 manual set out to reflect and promote a changing view of intellectual disability and the crucial trends taking place in service provision. Luckasson and Spitalnik (1994) set out the (shifts) changes in thinking and practice, leading to the 1992 manual.

Intellectual disability is not a medical disorder, but it is coded in a medical classification of diseases of the World Health Organization (WHO 1992). Intellectual disability is defined as

'…. a condition of arrested or incomplete development of the mind, which is especially characterized by impairment of skills manifested during the developmental period, skills which contribute to the overall level of intelligence, ie. cognitive, language, motor and social abilities. Retardation can occur with or without any other mental or physical condition' (WHO 1992).

Masland (cited in Scheerenberger, 1987) prepared the following definition.

"Mental retardation (refers) to a condition of intellectual inadequacy which renders an individual incapable of performing at the level required for acceptable adjustment within his cultural environment".

Intellectual disability is a learning difficulty that is characterized by limitation in various skill areas. These may include limitation in self-care, daily living, social interaction, judgment and self-direction. Intellectual disability usually becomes evident during the developmental years. The skill limitation due to the disability often exists alongside other abilities. With the appropriate support, people can learn skills to participate in their community.

Different Perspectives on Defining Intellectual Disability

Mental retardation (intellectual disability) can be defined in many ways. We discuss the concept in terms of educability. We understand it in term of causes (etiology). We particularize it in terms of the intelligence quotient (IQ). We examine it in terms of consequences. We do something about it in terms of

treatments. Scientists study it, clinicians treat it, administrators deal with it, parents anguish over it, and many citizens ignore it (Blatt 1987)

Update of AAMR definition

The AAMR has published a new definitions and manual (AAMR 2002)

"Mental retardation is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills. This disability originatnates before age 18".

Classification of Intellectual Disability

The 1973 and 1983 AAIDD definitions of intellectual disability divided severity of disability into four categories (mild, moderate, severe and profound intellectual disability), a classification system that continues to have widespread acceptance.

The classification of intellectual disability according to severity of disability are:

Level of ID	IQ Range	Approximate mental age in adulthood
Mild	55 – 59	8 years, 3 months to 10 years, 9 months
Moderate	36 – 51	5 years, 7 months to 8 years, 2 months
Severe	20 – 35	3 years, 2 months to 5 years, 6 months
Profound	<20	< 3 years, 2 months

Source: Sattler 2002, P. 337

Intellectual disability has multiple casual factors, including genetic predisposition, environmental insults, developmental vulnerability, heredity and environment (Harris, 2006).

The AAIDD proposed a multi factorial approach to etiology, involving the following four categories (AAMR, 2002, P.127)

1. Biomedical: Those factors which relate to biological processes, such as genetic disorders or nutrition.
2. Social: Those factors that relate to social and family interaction, such as stimulation and adult responsiveness.
3. Behavioral: Those factors that relate to potentially causal behaviors, such as dangerous activities or mental substance above.
4. Educational: Those factors that relate to the availability of educational supports that promotes mental development and the development of adaptive skills.

AAIDD uses a classification system which is based on the type and extent of the support that the individual requires to function in the natural settings of home and community. AAIDD recommends four levels of support viz.,

1. Intermittent: Supports are given on an "as needed basis". These supports may be Episodic which means the person does not always need assistance; or short-term, occurring life span transitions (e.g. job loss). These supports may be of high or low intensity.
2. Limited: These supports are characterized by consistency; the time required may be limited, but the need is not intermittent. Less staff may be required and expense may be lower than those associated with more intensive levels of support (e.g. time limited employment training and supports during transitions from school to adulthood).

3. Extensive: These supports are characterized by regular environment (e.g. daily) in at least some environments, such as work or home; supports are not time-limited.
4. Pervasive: These supports are constant and of high intensity. They have to be given across multiple environments and may be life-sustaining in nature. These kind of supports typically involve more staff and are more intrusive than extensive or time-limited supports.

   Source: Adapted from Mental Retardation: Definition, classification and systems of supports, 10th ed (Washington, DC: American Association on Mental Retardation, 2002, P. 152).

The most widely accepted definition of intellectual disability is given by AAIDD: "intellectual disability (is) characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills. This disability originates before age 18" (AAIDD [AAMR], 2002, P.1)

Accompanying this description are five assumptions considered essential when applying this definition.

1. Limitations in present functioning must be considered within the context of community environments typical of the individual's age, peers and culture.
2. Valid assessment considers cultural and linguistic diversity as well as differences in communication, sensory, motor and behavioral factors.
3. Within an individual, limitation often coexists with strengths.

4. An important purpose of describing limitation is to develop a profile of needed supports.
5. With appropriate personalized supports over a sustained period, the life functioning of the person with intellectual disability will generally improve (Luckassen et al., 2002).

The American Association on Mental Retardation (AAMR) definition is as follows (AAMR, 1992)

"Mental retardation refers to substantial limitation in present functioning. It is characterized by significantly sub average intellectual functioning existing concurrently with related limitations in two or more of the following applicable adaptive skill areas: communication, self-care, home living, social skills, community use, self-direction, health and safety, functional academics, leisure and work. Mental retardation manifests before age 18".

The first part of this definition establishes mental retardation as a category of concern for people whose current levels functioning are limited. There exists difficulty in learning and doing certain daily life skills as a result of substantial limitations in conceptual, practical and social intelligence. The second part of this definition-"significantly, sub average intellectual functioning" – usually is translated as a score of 70 to 75 or below IQ. This definition also establishes adaptive skill limitations must occur at the same time as intellectual limitations; intellectual functioning alone is insufficient basis for a diagnosis of mental retardation. This definition also indicates that mental retardation manifests itself before the age when individuals are expected to take adult roles (the eighteenth birthday)

People familiar with an individual's response to the day to day demands of living in home, school, work and community environments are best qualified to evaluate adaptive behavior. Because expectations for different age groups vary, so do the criteria employed to identify deficits in adaptive behavior at different ages. Grossman (1983) linked the criteria to developmental stage: During infancy and early childhood, deficits appear in

- Development of sensory skills
- Communication skills
- Self-help skills
- Socialization

During childhood and early adolescence, deficits appear in all the areas just listed and/or

- Application of basic academic skills in daily life activities.
- Application of appropriate reasoning and judgment in mastery of the environment.
- Application of social skills to participation in group activities and interpersonal relationships.

The adaptive-behavior criteria's is central to planning interventions for students with intellectual challenges. Instruction is directed at areas crucial to successful adaptation in schools, homes and communities, not just typical academic areas.

Students with mild mental retardation are called "educable mentally retarded" students with moderate retardation sometimes are designated as "trainable mentally retarded"

Causes of Mental Retardation

The five general causes of mental retardation according to American Psychiatric Association, 1987, are:

- Hereditary factors (Inborn errors of metabolism, genetic abnormalities, and chromosomal abnormalities). Down syndrome is the best known.
- Alteration of embryonic development due to maternal ingestion of toxin (alcohol, drugs), injections, cerebral malformation or unknown causes.
- Pregnancy and prenatal problems (prematurity, trauma, fetal malnutrition).
- Physical disorders acquired in childhood (Lead poisoning, injection, traumas, brain disease)
- Environmental influences (psychosocial deprivation, sensory deprivation, severe neglect, malnutrition, complication of severe mental disorders).

Characteristics of Students with Mental Retardation

Rates of learning that are slower than those of their peers and evidence of delays in most areas of development. Students with mental retardation fail to meet expectation in many areas – cognitive, academic, physical, behavioral and communication.

Cognitive:- Students with mental retardation show delayed cognitive functioning. These students do not learn as effectively or efficiently as their counter parts. They are slow to generalize and conceptualize, and have very weak comprehensive skills. They possess limited short term memory and have difficulty in discrimination, sequencing and identifying analogies.

Academic:- Students with mental retardation perform poorly in the majority of academic subject areas; students with learning disabilities often demonstrate specific areas of academic difficulty.

Physical:- The physical appearance of most students with mental retardation does not differ that of their peers, but some of their physical abilities are deficient. Usually their retardation is a product of genetic rather than environmental factors. Students with mental retardation have limited physical mobility. Many face difficulty in walking and some other cannot stand or sit without support.

Behavioral:- Individuals who are mentally retarded exhibit socially inappropriate behaviors, often they are both socially and emotionally immature. Inappropriate behaviors, antisocial behaviors and odd mannerism can lead to social disapproval.

Communication:- Those who show delayed cognitive functioning typically show delayed development of language and communication skills. Students with mental retardation face difficulty in expressing themselves well enough to be understood. Those with mild mental retardation may demonstrate delayed comprehension and receptive and expensive language problem.

Guidelines for Teachers Dealing with Intellectually Challenged Students

1. Provide alternative instructional presentations using varied examples and focus on functional skills.
2. Provide opportunities for students to demonstrate understanding actively before moving to independent practice.

3. Provides more opportunities for practice than appropriate or necessary for classmates.
4. Use concrete examples when teaching new skills.
5. Provide supportive and corrective feedback more often than necessary for classmates.
6. Modify tests and evaluation measures to compensate for learning problem.
7. Evaluate student's performance and progress more frequently than appropriate or necessary for classmates.
8. Adapt instruction to the environments where what is being learned will be used.
9. Break lessons into smaller parts when teaching complex skills.
10. Be prepared to repeat teaching more frequently than necessary for peers.

Rewarding process:- Completion of most class room assignments can be broken into three main activities: starting, working and finishing. For some students simply getting started is a major accomplishment. Providing more frequent rewards, such as for starting and working, helps these students complete more work. The students should be given opportunities for practice with everyday materials, Using a Phone book, Computer puzzles, Connecting writing to daily activities, Real life math, and in class field trips.

Improving School Adaptive Behavior

Social skills, self-direction, self-care and health and safety are among the school adaptive behaviors that are intervention targets for students with mental retardation.

Improving Leisure and Work Skills

Being successful at work and knowing how to use free time are important adaptive behavior skills that are the focus of intervention for students with intellectual disabilities.

Some ways to improve work skills are:

1. Communicate to students that attendance and punctuality are important and "practice what you preach".
2. Keep accurate records of attendance and punctuality and provide special activities for students with perfect or improving records.
3. Have students monitor their own attendance and punctuality. Use daily journal entries or time cards as records for their self-monitoring activity.
4. Encourage students to be punctual by scheduling special announcements.
5. Make special activation such as games, videos and parties contingent on completion of assigned tasks.
6. Have students record and chart the number of assignments completed each day.
7. Break long assignments into shorter units. Provide rewards and support after completion of each smaller task.
8. Set liberal standards for task completion and gradually increase them after students with mild retardation develop appropriate skills.

Individualized support plan

As discussed intellectual disabilities have enough causes and result in unique and individualized ways. As such , medical treatment alone is not sufficient

to address the different types of resulting impairments and limitations .While medical treatment is helpful for treating intellectual disabilities, it alone is not sufficient to address the intellectual and functional deficits of the affected individuals. As intellectual disabilities are not illness, there are no proper treatments. On the other hand interventions focus on identifying the abilities and limitations of each individual and to provide sufficient supports to enhance each individuals' functioning.

Individual support planning encourages a team approach to involve the person and society networks in planning for the future. The process comprises developing a vision for the future, while accommodating resources and supports to make the vision a reality. Supports should be planned and effectively implemented in accordance with each individual's unique needs, expressed preferences and decisions concerning his/her life in the society. Cultural and religious values also can be shared so that these will not be compromised unknowingly by the educational staff (King, Baxter, Rosenbaum, Zwaigenbaum, & Bates, 2009; Poston & Turnbull, 2004).

The individualized support plan is an investment in a person's life and is driven by the person, what is important to them as designed through outcomes identified in the support plan. In addition to curricular adaptations, they will need individualized teaching support that considers both their challenges to learning as well as their strengths. When teachers differentiate their instruction to involve all learners, students of quite different abilities will be able to demonstrate what they know (Thousand, Villa, & Nevin, 2007).

Individualized Support Plan quality outcome should:

- Be in every individual's plan- This is for guiding service provision in order to meet the requirements of the individual
- Be individually directed- The individual has the authority and is supported to direct and manage his/her supports
- Be based on assessment- Complete information concerning each individual's preferences, individual needs, goals and abilities and other available supports gathered and used in developing the individualized plan
- Importance on social networks as an important factor in the quality of life for the individual.
- Incorporate decision making-Information and support available should help the person to make informed selections among support options.
- Promote free choice of provider- Assist the individual to freely choose among qualified providers.
- Result in a comprehensive plan- Address the individual's need for supports in accordance with his/her expressed preferences and goals.

The ISP process helps people achieve their life goals and evolved the person's life evolves. The ISP must be developed with the maximum possible participation of each of the following persons, collectively referred to as the "team".

- Family members and /guardians
- Principal/ headmaster
- Teachers
- Friends, peers, acquaintances

- Direct support professionals (staff, care givers, etc.)
- Others who are most important to the individual/family and those involved in the individual's life.

Without strong family input and involvement, educational teams could easily get off track with regard to critical learning needs and the most appropriate academic goals to pursue (Blue-Banning, Summers, Frankland, & Beegle, 2004; Lynch & Hanson, 2004).Almost all schools make provisions for children with special educational needs. The IEP makes individualized educational goals for each child. Children with intellectual disabilities should receive an IEP. The Individualized Education Plan is not the same as an Individualized Support Plan. But the IEP and ISP may be similar, especially for school age children. Educable intellectually challenged children can attend regular school with additional learning support. These children attend regular classes most of the day. Special education teacher work individually with students to meet the goals of ISP.

Thompson et al. (2009) identified the following Support Model

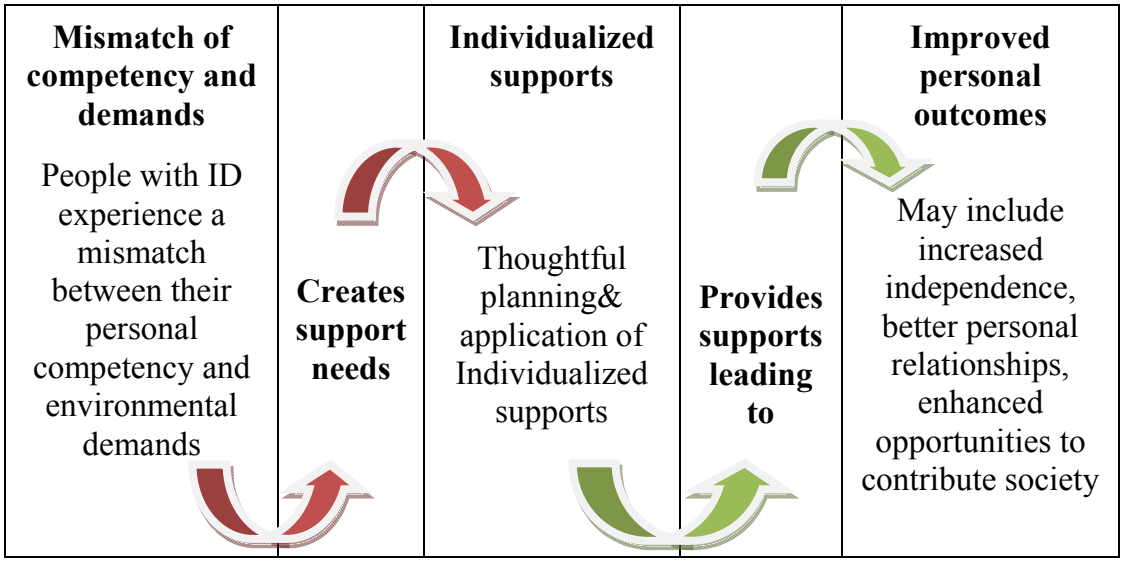


Figure 1. Supports Model

Principles govern the development of ISPs

As defined by Luckasson and colleagues (2002), "supports are resources and strategies that aim to promote the development, education, interests and personal wellbeing of a person and that enhance individual functioning". The following principles govern the development of ISPs:

- Respect for the dignity and rights of the individual
- Humane and adequate care and treatment;
- Self-determination and freedom of choice to the individuals' fullest capacity
- The opportunity to live and accept services in the least restrictive environment
- The opportunity to undergo typical developmental experiences and
- The opportunity to engage in activities and styles of living which encourage and maintain the integration of the individual in the society through individualized social and physical environments.

The ISP must promote the following ends:

- The rights and dignity of the individual concerned.
- The individual's ability to pursue individual control in his or her life.
- The individual is a member of the larger, integrated community and can function like any other member
- The individual has opportunities and support to develop, maintain, and strengthen meaningful relationships with family, friends, neighbors and peers.
- The individual can follow personal growth and accomplishments
- The individual enjoys health, safety, and economic self sufficiency.

Adapting Instruction

Review of data on the preferences of general education teachers concerning modifications and adaptations for intellectually challenged students indicates that preferred adaptations typically revolve more around changes in instructional delivery systems and response modes rather than in changes in the actual curriculum or the standards associated with the curricular content (Polloway, Epstein, & Bursuck, 2002). Sometimes an intellectually challenged student may need to have changes made in class work or routines because of his or her disability. Modifications can be made to:

- What a student is taught, and/or
- How a student works at school

Suppose a child is an 8th grade student who has mild intellectual disability. He is in a regular 8th grade class that is team taught by a general education teacher and a special education teacher. Modifications and accommodations include:

- He will shorter reading and writing assignments
- The textbooks will based upon the 8th grade curriculum but at his independent reading level (4th grade)
- He will have test questions read/explained to him, when he asks.
- He will give his answers to essay-type questions by speaking, rather than writing them down.

Modifications or accommodations are made in the following areas:

(a) Scheduling. For example,

- Giving the student extra time to complete assignments
- Breaking up testing for many days

(b) Setting. For example,

- Working in small group
- Working one-on-one with the teacher

(c) Materials. For example,

- Giving audio taped lectures or books
- Giving short notes by the teacher
- Using large print books or digital text

(d) Instruction. For example,

- Minimizing the difficulty of assignments
- Reducing the level of reading
- Using a friend/ peer tutor

(e) Student Response. For example,

- Permit answers to be given orally or dictated
- using a word processor for written work

Adapting the content, methodology and delivery of instruction is an essential element of special education and an extremely valuable support for students, it's equally essential to know as much as possible about how instruction can be adapted to address the needs of intellectually challenged student.

Curriculum augmentation and Adaptation strategies

Learning Strategies

Cognitive or learning strategies give students with strategies that enable them to engage the learning process more effectively (Rosental-Malek & Bloom, 1998). There are different types of learning strategies (including shadowing,

verbatim notes, graphic or advance organizers, semantic maps, mnemonics, chunking, questioning, and visualizing strategies), that comes under the category of curriculum adaptations or augmentations (Rosental-Malek & Bloom).

Graphic Organizers

Graphic organizers are "visual displays teachers use to organize information in a manner that makes the information easier to understand and learn" (Meyen, Vergason, &Whelan, 1996, p. 132)

Chunking

Chunking is a process of "combining related elements into units" (Sylwester, 1995) that are manageable to students. It is curriculum augmentation strategy in that students learn to 'chunk' material to make it more manageable and to improve memory and recall.

Mnemonic Strategies

Mnemonic strategies are systematic procedures for enhancing memory by providing effective cues for recall as "cognitive structure" such as word, sentence, or picture devices (Bellezza, 1981; Lombardi & Butera, 1998). This method is used mainly in developing better ways to encode new information for easier retrieval (Mastropieri & Scruggs, 1998).

Student-Directed Learning Strategies and Self-Determination

Student-directed Learning strategies form a subset of broader learning or cognitive learning strategies, and represent a powerful means to augment the curriculum to enable students with intellectual disabilities to perform more effectively in the general curriculum (Wehmeyer et al., 2001). Promoting and

enhancing self-determination and its component elements (goal-setting, problem-solving, self-regulation and other skills) equips students with disabilities with skills that will enable them to succeed in the general curriculum (Wehmeyer et al., 2004).

Effective Teaching Methods for People with Intellectual Disabilities

Pupils with intellectual disabilities benefit from the same teaching strategies used to people with other challenges like learning disabilities, attention deficit/hyperactivity disorder, and autism.

One strategy is to break down learning tasks to small steps. Each learning task is introduced one by one. Once the student has mastered one step, the next step is introduced. This is a progressive, step-wise, learning instructional approach. Bruner (1961) believes any concept can be taught at any level provided it can be broken down into its simplest elements.

Another strategy is to modify the teaching approach. Lengthy verbal directions and abstract lectures are ineffective teaching methods. Most people are kinesthetic learners by nature. This means they learn best by performing a task "hands-on". A hands-on approach is particularly helpful for students with Intellectual Disability. They learn effectively when information is concrete and observed.

Another strategy is the maximum use of visual aids. This includes charts, pictures, and graphs. These visual tools are very helpful for helping students to understand what behaviors are expected of them. For example, using charts to map student's progress is very effective.

And the last one is to provide direct and immediate feedback. This enables the students to make a connection between their behavior and the teacher's response.

Social science education

The ultimate goal of educable mentally challenged children is an "adequate independent life as a contributing member of the community" (Laura Jordan, 1966). 'The civic program should be built largely around discussions of current community, state, national, and world affairs" (Johnson, 2016)

Social science is an important category of academic discipline, concerned with society and the relationship among individuals within the society. It consists of so many branches like History, Geography, Economics, Political Science and Sociology. The main aims of teaching of social science are the following;

Broad aims

- The development reasoning power and critical thinking
- Acquiring knowledge
- International understanding
- Training in independent study
- Formulation of habits and skills

Aims of teaching Social Science at secondary stage

The main aims of teaching social science in the secondary stage are the following:

- Uphold democratic and secular values

- Make responsible citizenship
- Inculcating social values, personal values, constitutional values etc.
- International understanding
- Citizenship training
- Patriotism and cultural values
- Cultural preservation, transmission and transformation

Studies Conducted in India and Abroad

Efilti (2019) conducted a study to examine the psychological resilience with mentally challenged children. The study used the relational survey model, which is a quantitative research model. The unit of analysis of the study was the fathers of children with special education needs. The result of the study shows that the fathers with mentally challenged children have the highest social competence among 26 - 35 age groups. The findings provide that the group with the highest level of psychological resilience is the group having college or vocational school graduation grade in terms of the educational status of the participants. When considering the variable of the job status of fathers, the results show that the future perception level of the employed group is higher than the non-employed group.

Pounds and Cuevas (2019) conducted a study on student's environment in their Individualized Education Plan, The aim is for students to become self-advocates and learn to develop goals that pertain to their interests. The study examined the following three questions First, does student involvement in their IEP lead to greater mastery of IEP goals? Second, does student involvement in their IEP influence academic achievement? Third, in what ways does the Self-Advocacy Strategy, IPLAN, enhance student participation in IEP meetings?

Three students participated in the study by providing inventory on their strength, weakness and what assists them learn. Each student differed in the amount of inventory they provided, support that was required and understanding and application of the inventory in the class room.

Alshamri (2019) conducted a study to evaluate the quality of education received by students with intellectual disability in Aljouf, Saudi Arabia from the perspectives of their teachers and parents. 95 respondents were used on sample which found that most teachers used 'baby steps' strategy in delivering content for students with intellectual disabilities. Most of the parents relied entirely on formal education for their children and were not directly involved with their children's education at home. Only a minority of the teachers and parents did not feel very confident about the effectiveness of the existing systems in teaching their children important social and practical skills.

Kaya and Yildiz (2019) conducted research to examine the effects of Montessori education on the mentally challenged individuals in the special education who have had Montessori education and who have not had it. 24 trainable mentally disabled male students, in the age group of 20-22 years, who had and did not have Montessori education in a private school participated in the study. The experimental group included 12 voluntary mentally disabled students. The result concluded that it was advisable Montessori education program to be used widely as the pre-test post-test values in the mentally retarded individuals in the experimental group revealed significant difference ($P< 0.05$).

Peterson-Ahmad, Stepp, and Somerville (2018) conducted a study on web 2.0 use in differentiating instructional strategies for students with disabilities in inclusive settings. The study delineates data from a study of N=82 pre-service

teachers. All students were administered a pre-and post-survey that asked question specific current knowledge of web 2.0 and the extent to which they thought it could be used in their future teaching practices. This assignment required pre-service teacher candidates to utilize the pinterest platform to find and 'pin' educational materials specific to students with whom they will work within future inclusive classroom, relative to the various sections of special education.

Qian, Clary, Johnson and Echternacht (2018) conducted a study on the use of a coaching model to support academic success and social inclusion of students with intellectual disabilities. The paper presented findings from qualitative interviews with 39 students with intellectual disabilities who participated in a five year demonstration project entitled Transition and Post-secondary programs for students with Intellectual Disabilities (TPSID). Students considered the two most valuable components of the coaching program to be the development of a positive student-coach relationship and the "open-door" policy in which students could drop in on their coaches without an appointment. Flexibility in scheduling fostered rapport building between students to accept individualized supports as needed. The positive aspects of the program included their improved academic success and increased academic motivation and engagement.

Murray, Mungar, Colwell and Claussen (2018) conducted a research on the implementation efforts of 80 school districts and the teacher preparation program of seven IHEs regarding statewide school improvement efforts through parent-teacher partnerships. The study found that with the success of the statewide initiative, future records efforts could focus on replacing this initiative

by developing parent-professional partnership training for social work, criminal justice, nursing and other service-oriented professors at both the agency level and the IHE level throughout the United States.

Algahtani (2017) conducted a review on about various teaching strategies to enhance the education system among students with intellectual disabilities. The author put forward the debate on the application of constructivist and behaviorist perspectives for teaching students with intellectual disabilities. The author recommends a combination of principles from the two approaches to best structure instruction and teaching. The paper offers a number of recommendation for teaching intellectually challenged children in school setting like breakdown of activation into small parts; model, illustrate and explain every step in a process or new activity; employing reward etc.

Ozokcu, Akçamete and Özyürek (2017) conducted a study to reveal whether or not the social skills teaching program based on the direct instruction approach is effective on the ability of mentally challenged students in regular classroom settings to gain social skills like apologizing, asking for help and finishing a task on time, and to generalize those abilities. The study used the model of multiple-probe design between subjects which takes place in the research methods of single-subject design. The study was conducted with one 12 year-old male student and two female students, ages 12 and 11. Instrumental plan included acting as a model, guided practice and independent practice steps, which are the base stages of the direct instruction approach, were used. The result of the study showed that the social skills teaching program based on the direct instruction approach was effective on the ability of three mentally

challenged students to gain the target social skills and to generalize these abilities.

Erim and Caferoğlu (2017) conducted a study to discriminate the influence of visual art studies on the motor skills development of primary school first grade level trainable mentally retarded to this process. The sample of the study consists of special education teachers working for fifteen special education institutions. Questionnaires were used as a data collection technique. The study found that most of the participating teachers think that visual art education plays an important role in the development of mentally retarded children and visual art classes are beneficial to developing motor skills and improves hand-eye coordination.

Nazirzadeh, Çagiltay and Karasu (2017) conducted a study to develop a gesture based game to teach basic life skills to mentally disabled kids by a motion sensing device. For their, a vacuum cleaning digital video game was designed by using the unity 3D game engine, and Microsoft Kneelt, based on spiral development methodology. Tests were performed in two special education schools with the help of a special education expert. The game prototypes were tested on various spectrums of mentally disabled children. The results showed that this system positively help children's basic life skills learning.

Deniz (2016) conducted a study to define the perceptions of prospective special education teachers through metaphors. The design used was based on Phenomenology. The study group included 116 third year prospective special education teachers of Special Education (Mentally Disabled Teaching). The results showed that the metaphors created by prospective special education

teachers on the concept of special education teacher were grouped under ten categories viz (1) patience and devotion(2) source of love and affection (3) difficulty of profession (4) complimenting (5) Life coaching/guidance (6) Superiority (7) Weariness of profession (8) Skill teaching (9) Social leadership and (10) social prejudices. All these categories were discussed and some concrete research proposals were suggested for further studies.

MacLeod, Hawken, O'Neill and Bundock (2016) conducted on secondary level or Tier 2 interventions such as the check-in check-out (CICO) intervention effectively reduce problem behaviors of students who are non-responsive to school-vide interventions. But, some students will not be successful with Tier 2 interventions. This study investigated the effects of adding individualized function-based support for four students with disabilities who are not successful in general education settings while receiving only a secondary level intervention. Results showed that the combination of secondary and individualized function-based interventions effectively reduced problem behavior for all participants. Teachers and students rated the intervention as acceptable and very effective.

Buli-Holmberg and Jeyaprathaban (2016) conducted a study to evaluate the effective teaching practice for children with special learning needs. The research question in the present study was that which practice will be effective in different inclusive classroom settings and what are the factors that contribute for effective practices. Qualitative research was carried out using the case study method of embedded single case design to answer the research question. The investigators adopted different criterion under three categories: (1) interaction (2) support and (3) adaptation for analyzing the best inclusive classroom

practices. The criteria used in the support category are general teacher support, special teacher support, teacher supporting student participating in the learning community, The adaptation category employed the following criteria; classroom facilitation, learning materials and teacher's instructions. The study emphasized that there is a lack of expertise on the part of general teachers to deliver adapted teaching learning process in inclusive classroom settings. The study suggested the need to build competencies on the part of the general teachers and provide necessary teaching-learning interaction, support and adaptation in all type of inclusive practices.

Joseph and Muthee (2016) conducted a study to examine the effects of parent's involvement in education on the academic performance of the mentally challenged learners in primary schools of selected schools in Thika Municipality in Uganda. The objectives of the study was ascertain whether cultural beliefs among the parents affects the enrolments of mentally challenged children in the area under study; determine whether the parents teach their mentally retarded children adaptive skills; establish whether the mentally challenged children play their role effectively as far as the education of their children is concerned and to find out whether the parents understand and appreciate the importance of taking their mentally challenged children for assessment. The researcher adapted descriptive design to collect data. The target population was all parents and teachers of mentally retarded children in the selected schools under study. The important findings of the study was that cultural beliefs, negligence, lack of sensitization and lack of technical skills among the parents and the teachers were the major causes of limited enrolment of mentally challenged children in

selected school under study. The study suggested that parents and their siblings should appreciate their little achievement in order to boost their morale. Modified curriculum be used by teachers in order to accommodate all the needs of learners with intellectual challenges and specialized training for teachers also should be given by competent authorities.

Johnson, Moylan, Crawford and Ford (2016) studied on observation systems which could provide teachers with information about how to improve their instructional practice and could lead to improved student outcomes. An effective special education teacher evaluation system must measure and provide targeted, corrective feedback on instructional practice, rely on the use of raters and observers with specific content, specific expertise and be correlated with individualized student growth measures effectively. They explored the question of whether objective measures of special education teaching can be created and implemented in a valid and fair way that yields useful and reliable results and examine issues related to the content of the observation, requirement for raters, and the type of feedback that will be required to instructional change in the context of recently funded research project, Recognizing Effective Special Education Teachers.

Konovalova (2016) conducted a research which concentrated on the study of personal and social determinants influencing the readiness of mentally handicapped students to be integrated into the environment. Research manipulations comprised the use of tests by J. Guilford and M.O. Sullivan in the adaptation of E.S. Mikhalova and “observance card” by J. Stott in the adaptation of V.A. Murzenko with a group of around 130 teenagers with mild mental handicap. The results showed that social intellect development of mentally

handicapped teenagers is rather low due to biological but mainly social factors connected with unsatisfactory condition of upbringing and educational development, lack of possibilities to satisfy personal social and emotional needs as well as non-forcedness of social abilities.

Shogren et al. (2015) developed the Supports Intensity Scale Children's Version (SIS-C) to the support needs of children and youth aged 5 to 16 years with intellectual and developmental disabilities. Data from the standardization sample of SIS-C were analyzed to know the impact of the age cohorts (5-6, 7-8, 9-10, 11-12, 13-14 and 15-16 years) used to stratify the sample on the measurement model, as well as the latent means, standard deviation and correlations. The results conformed measurement invariance across age cohorts, but suggested that at the latent level, younger children, generally have more support needs and that on students with intellectual disability age their support needs decrease.

Mapuranga, Dumba and Musodza (2015) conducted a study to investigate the impact of Inclusive Education on the rights of children with Intellectual Disabilities in Schools around. The qualitative case study method was used. Questionnaires and interviews were used to collect data. Random sampling technique was used to choose the sample group from a population of 80. Thirty respondents which comprised of 10 teachers, 10 children and 10 parents constituted the sample group. The results of the study found, that inclusive education recognizes the rights of children with intellectual disabilities. But the parents complained that IE do not offer conclusive learning environments of children with IDs. There should be an education policy to fully cater for the educational needs of learners with IDs.

LeDoux, Graves and Burt (2012) conducted an action research to explore three main research question: (1) What challenges do special education students present for general education teachers in inclusive classrooms?; (2) What are the perceived needs of general education teachers in relation to accommodating special education students in their classrooms?; and (3) In what ways can administration support general education teachers in accommodating special education students? The findings showed general education teacher's need for better communication, professional development concerning children with disabilities and a need for more planning time.

Kalavathy (2012) put forward a scientific model to deal with such children which includes the following:

- Accepted the child as he is
- Counseling the parents to accept him as he is
- Care and co-operation of peers and facilitators
- Acceptance and assistance from peers
- Treating exceptional and other normal children the same
- Encouraging even the little things that the exceptional child does
- Providing age-appropriate life skills
- Performing such tasks which can develop self-confidence in child
- Providing a child-friendly environment for freedom of expression
- Using multiple activities to strengthen each concept

Dagseven (2011) conducted a study which was aimed at comparing the effectiveness and efficiency of direct instruction and problem solving approaches in teaching social skills to children with mental disability. The

subjects of the study consist of a girl and a boy between the ages of 11 and 13 who mentally challenged. For collecting the research data, teacher's interview form, the control checklists of social skills, criterions-referenced tests and data record sheets to use during direct instruction and problem solving approaches were developed and used. The result shows that direct instruction approach in teaching social skills to first subject. In acquisition of social skills direct instruction was more efficient in terms of total training time and training errors through criterions than problem solving approach.

Upadhyaya and Havalappanavar (2008) conducted a study on various coping strategies used by the parents of mentally challenged individuals; fathers and mothers of 628 mentally challenged individuals are assessed using the coping checklist by Rao, Subbakrishna and Prabhu which taps seven coping strategies viz. problem solving, positive distractions, negative distractions, acceptance redefinition, denial-blame, social support and religion-faith. Results showed that fathers and mothers differ significantly at 0:01 level with regard to use of all the seven strategies for fathers most commonly practiced coping strategies are problem solving and acceptance-redefinition. For mothers, most commonly used coping strategies include problem solving, religious-faith and denial-blame. Higher educational level, non-agricultural occupation, better income and urban status of the family are the important factors predicting higher levels of coping.

Summers, White, Zhang and Gordon (2014) observed that Federal supporting the rights of students with disabilities to access post-secondary education had helped to facilitate a significant increase in the number of

individuals with disabilities enrolling in post-secondary institutions. They discussed the supports offered to students with disabilities in post-secondary settings as well as barriers and gaps in that support. Primary gaps include the lack of tools for Disability support services staff to use in providing appropriate training to students to increase their ability to self-advocate for accommodation. The authors presented a conceptual frame work for and a description of a training curriculum that is intended to address these gaps. The training comprised an online, interactive tutorial which offers knowledge about rights, procedures for accessing accommodations, and a self-assessment for students to learn about appropriate accommodation to meet their individualized needs.

Ittyerah and Kumar (2007) emphasized on four components of the self-concept; body image, life experiences, skills or abilities and social interaction patterns for children, adolescents and adults with disabilities. The narratives from children (7-13 years) included in the study showed that schools were viewed as “place of reparation”. Children interviewed in this study had highest mean scores for positive statements on self-concept and adolescents with disabilities in the age group of 14-20 years, had least children with disabilities also had the highest mean scores for the negative statements showing their tendency to respond in extremes. In inclusive settings self-evaluations provides a measure for comparisons with peers without disabilities. Thus, exploring the school experiences of children with disabilities in inclusive schools and the impact of these experiences on self-identity becomes significant.

Sun (2007) observed the impact of inclusion based education and the likelihood of independence for students with special needs. The number of

students requiring assistance in special education has remained constant for the past 15 years. Over the years, the services provided in special education have increased tremendously. Sun's research founded on whether holding students with special needs accountable to the same standards as regular education students could impact their independence in the future. The barriers faced by students with special needs are much greater. A total of 6,562 individuals were observed and results indicated special education students needs more guidance in the regular education classroom, however, they tend to participate more.

Singal (2010) observed that the teachers in inclusive classroom were engaged in adapting the classroom organizational frame work, rather than differentiating the learning experience for the child with disabilities. This is clear from the teacher's efforts to seat the child with more 'able 'peers, giving her/him extra time, a reduced syllabus and making small adjustments within the dominant chalk and talk pedagogy adopted in the classroom. In addition, teachers also showed high dependency as 'others', namely parents and special education, for the child's learning.

Mathur et al. (2007) conducted a study on Dietary habits and Nutritional Status in Mentally Retarded Children and Adolescents. The objective of the study was to compare the dietary habits and nutritional status mentally retarded (MR) and normal (NG) subjects to examine the relationship between the dietary habits and nutritional status and the level of mental retardation in the MR group. 117 MR (random sampling) and 100 NG (quota sampling) subjects between 7-18 years matched for age and socio-economic status were selected from a govt. and private institution, respectively Nutritional status (energy, fat,

protein, calcium, iron and vitamins) was assessed by the food diary method. Results showed that diets of MR and normal group subjects were inadequate with MR had significantly lower consumption of all nutrients in comparison to normal boys.

Ghosh (2005) investigated that the rehabilitation practices of a society could be comprehended taking a closer looks at the cultural nuances and responses to disability. Historical events, sacred texts and social institutions, all contribute to the social construction of disablement. In Indian and other Asian societies, the concept of 'Karma' governs basic assumption about disability, where disability is seen as the result of one's deeds in previous births.

Balasundaram (2005) observed same problems in the implementation of inclusive education in India. Currently, the education for children with mild disabilities is provided under the integrated education Program and the special schools for children with severe disabilities under the Ministry of Social Justice and Empowerment implemented through state governments and NGO's. A major deterrent has been lack of relevant statistics on the prevalence of disability. Surveys conducted by the NSSO (National Sample Survey) in 2002 and the census in 2001 depicts varying figures with the NSSO quoting 1.8% (1.85 crore of the country's population) and the census quoting 2.19% of the population (2.19 crore). Another reason is the disparity in educational services in the govt. and private sector.

Ee et al. (2005) conducted a research study which focused on the special nature of special education and the experiences of teachers with regard to the

challenges they face in teaching the mentally challenged child. Special school teachers have the responsibility to offer not only good, but also highly individualized and goal directed instructions. The aim of the research was to investigate the following research questions: What are the experiences of teacher's regarding the major challenges they face in the education of the mentally challenged child? What guidelines can be provided to these teacher's. A qualitative study, with a descriptive, explorative, subjective and contextual research design was chosen, using a phenomenological approach to data collection. The teachers should daily accompany the mentally challenged child, with his many needs, problems, joys and sadness and especially his (or her) daily struggle at school to understand, to learn, and to develop, to finally take his place in society.

Broer, Doyle and Giangreco (2005) conducted a study on perspectives of studies with intellectual disabilities about their experiences with paraprofessional support. The investigators interviewed 16 young adults with intellectual disabilities about their experiences attending general education classes with paraprofessional support. Findings showed the primacy and exclusivity that exists between paraprofessional and these students as characterized by four inter connected themes regarding consumer perspectives of paraprofessionals as mother, protector, friend and primary teacher. Implications for practice promote schools to (a) increase teachers involvement (b) consider the social validity of supports (c) include them in decisions about their own supports and (d) highlight the importance of listening to students with disabilities.

Bouck (2004) presented a paper on curriculum for students with mild retardation. Since the introduction of Public Law 94-142 in 1975, the Education for All Handicapped Children Act, much discussion occurred regarding how to address curriculum in term of meeting needs of students within different types of special education categories. Later more discussion has emerged regarding transition and curriculum of focused towards assisting with this process, particularly as researches found dismal outcomes for special and even passing further laws do not guarantee that these ideas and practices are implemented in the curriculum.

Smith (2002) found that teacher attitude is one of the most important variables in the education of children with disabilities. Teacher beliefs under the philosophy of inclusion are important predictors of the outcomes of inclusion.

Pavri and Monda-Amaya (2001) investigated student and teacher perception regarding social support at school. Thirty students with learning disabilities in inclusive third to fifth grade classrooms were interviewed about their social network, social support, perceived loneliness and intervention preferences for social problems experienced at school. Sixty general and special educators also were interviewed about their roles; strategies used and preferred interventions in providing social support to students. Findings showed that while students with LD feel part of a social network, many reported school-related loneliness. General and special educators used same strategies to support students. Results suggested a difference between student's and teacher's choices of preferred social support strategies.

Cook and Semmel (2000) examined the implication of inclusion for students with mental retardation in inclusive settings are analyzed by employing tolerance theory, a joint model of on tame productions, and a model of differentiated expectations. The analyses examined how inclusion interacts with the unique learning needs and characteristics of students with mental retardation. The authors put forwarded implementing partial inclusion for students with mental retardation to consider the interaction of severity of disability and student variance in making inclusive placements to maximize social outcomes.

Knowlton (1998) conducted a study which discusses the process of personalizing a curriculum that is characterized by a rational, responsible, and responsive approach to planning and delivering supports for these students in integrated educational settings. Goals related to maximum independence and the highest possible qualities of life are put forward as benchmarks from which longitudinal, person centered planning is conducted. Two models of delivery, Co-operative Teaching and Community-based instructional integration, are then presented as agencies for delivering personalized curricular supports.

Wehmeyer and Schwartz (1998) conducted a study on the self-determination focus of transition goals for students with Mental Retardation. This study focused the transition goals of students with mental retardation to determine the degree to which these students were being taught skills related to self-determination. Results showed that there was limited emphasize in transition goals on self-determination.

Wisniewski and Alper (1994) examined a number of social, judiciary, and regulatory policies which are intended to change current educational practices. Educational change will not occur automatically rather it occurs as a result of leaders employing systematic procedures to bring about these changes. This paper put forward guidelines intended for educational leaders in effecting the change from segregated to inclusive school settings. Five systematic phases are presented. In order to bring about successful inclusion, leaders develop networks, assess resources, review options, install inclusion strategies and provide a system of feedback.

Saint-Laurent and Lessard (1991) presented a paper on the preliminary results of an ongoing study comparing three different forms of academic integration: (a) a special classes using a functional curriculum, (b) special classes using a traditional curriculum, and (c) regular classes. The sample constituted 25 boys and 16 girls, aged 6 to 10, having IQs from 25-55. After the completion of 1 year, no significant inter-group differences appeared for measurement of cognitive variables. But differences were found for teachers' subjective evaluations. Teacher of regular classes reported more behavioural change in their students who are handicapped and reported receiving more initial contacts from parents of these students.

Madden and Slavin (1983) examined relationships between children with learning problems and their peers have regularly indicated that learning-disabled and educable mentally challenged students have fewer friends and are more frequently rejected by their classmates than one other student. In this study, 6 classes of academically handicapped and normal-progress children

were randomly assigned to study mathematics co-operatively under a normal classroom structure. Results showed that co-operative techniques improved social acceptance in that rejection of academically handicapped students was diminished, but friendships were not increased. Academic achievement gains and increases in self-esteem were established for the combined sample of students in the co-operative learning treatment.

Schmidt and Nelson (1969) conducted a study on the affective/cognitive attitude dimension of teachers of educable mentally retarded minors. For the study one school district of 40 men and 40 women teachers of educable mentally retarded students, grades 7 to 12, were randomly selected. Each teacher completed the preferred student characteristic scale which allowed the ascertainment goals. The purpose of the study was to determine the effects and interaction between teacher's years of experience, different secondary levels and experience with EMR's, and gender differences on cognitive/affective attitudes of teachers. This study reinforce the view that special class teachers consider personal and social adjustment aspects of the educative process of major importance when compared to subject matter acquisition.

Conclusion

The above reviews of related literature give a broader perspective of the present problems. The investigator reviewed the literature in great extent. Most of the findings of the study support individualized instruction in inclusive settings enhance the academic performance. Further the analysis reveals that it is effective for enhancing the performance of mentally challenged students. The present trend in the educational scenario is in favour of individualized

learning in inclusive settings. From the review of literature related to the variables it is obvious that most of the studies related to the topic were conducted abroad. The variable ISP is a threshold area of educational research and is found to be less explored. And moreover, it is found to be promising for the 21st century classrooms. The investigator could not find any study showing effectiveness of instructional strategy based Individualized Support Plan on achievement in social Science in Intellectually Challenged students. In this context the present study is found significant.

METHODOLOGY

- Variables of the study
- Objectives of the study
- Hypotheses of the study
- Design of the Study
- Tools used for the Study
- Sample used for the Study
- Data Collection Procedure, Scoring and Consolidation of Data
- Statistical techniques used for analysis

Research is a scientific enquiry that is designed to collect, analyze and use data to understand, describe, predict or control an educational or psychological phenomena or to empower individuals in such contexts (Mertens, 2010). The success of any research work depends largely upon the suitability of methods, tools and techniques followed in collecting and processing data.

The present investigation attempted to study the effectiveness of instructional strategy based on Individualized Support Plan on achievement in Social Science in Intellectually Challenged Secondary School students.

The methodology of the present study is included under the following headings.

- Variables of the study
- Objectives of the study
- Hypotheses of the study
- Design of the Study
- Tools used for the Study
- Sample used for the Study
- Data Collection Procedure, Scoring and Consolidation of Data
- Statistical Techniques used for Analysis

The detailed description of each section is as follows

Variables of the Study

Variables are the conditions or characteristics that the experimenter manipulates, controls or observes (Best & Khan, 2007). Variables are the important aspects of testing condition that can change or take on different characteristics with different conditions. The variable which is manipulated by the experimenter and is capable of including change is termed as independent variable and the variable that undergoes change as a result of the above manipulation is called the dependent variable.

Purpose of the study was to find out the effectiveness of instructional strategy based on Individualized Support Plan on achievement in Social Science in Intellectually Challenged Secondary School Students.

The dependent and independent variables selected for the present study are the following.

Dependent Variable

The dependent variable in the present study is

- Achievement in Social Science

Independent Variable

The independent variables for the present study are

- Instructional Strategy based Individualized Support Plan and
- Existing Method of teaching

Objectives of the Study

The major objectives of the study are to develop an Instructional strategy based on Individualized Support Plan (ISP) and to test its effectiveness on the Achievement in Social Science among Intellectually Challenged Secondary School Students. To achieve the major objectives of the study investigator framed a set of specific objectives for the study which are following.

1. To find the perception of teachers on problems, challenges and present situation of Intellectually Challenged Secondary School Students.
2. To compare the mean pre-test score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
3. To compare the mean pre-test score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
4. To compare the mean pos-test score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
5. To compare the mean post-test score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
6. To compare the mean pre-test and post-test scores in achievement in social science of experimental group of Intellectually Challenged Secondary School Students.

7. To compare the mean pre-test and post-test scores of experimental group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
8. To compare the mean pre-test and post-test scores in achievement in social science of control group of Intellectually Challenged Secondary School Students.
9. To compare the mean pre-test and post-test scores of control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
10. To compare the mean gain score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
11. To compare the mean gain score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
12. To compare the mean gain score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
13. To compare the mean gain score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering,

Understanding, Applying and Analyzing when pre test score is taken as co-variate.

14. To find out the effect size of the developed instructional strategy based on Individualized Support Plan on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

Hypotheses of the Study

1. There is no significant difference in the pretest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
2. There is no significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.
3. There is significant difference in the posttest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
4. There is significant difference in the posttest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

5. There is significant difference between pretest and posttest mean scores of achievement in social science of the experimental group of Intellectually Challenged Secondary School Students.
6. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the experimental group
7. There is significant difference between pretest and posttest mean scores of achievement in social science of the control group of Intellectually Challenged Secondary School Students.
8. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the control group
9. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
10. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.
11. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually

Challenged Secondary School Students when pre test score is taken as co-variate.

12. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
13. The instructional strategy based on Individualized Support Plan has a very large effect on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

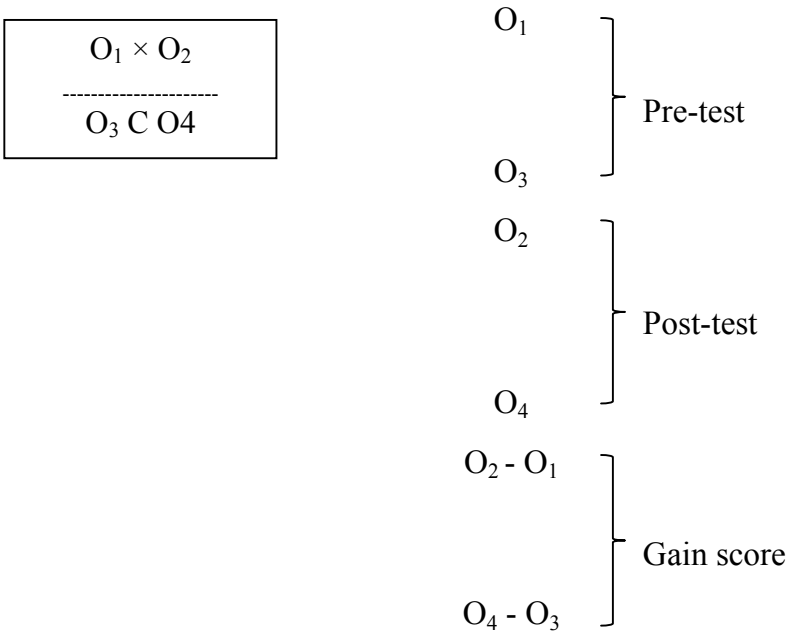
Design of the Study

The present study has been conducted by employing both survey and experimental methods. Experimental design is the blue-print of procedures that enable the researcher to test hypotheses by reaching valid conclusions about relationships that have observed. The present study was conducted in four phases. The first phase included survey and content analysis. The second phase focused on the development of Individualized Support Plan on achievement in Social Science.

The third phase of the study was experimentation. For experimentation pre-test post-test quasi experimental design was adopted. The pre-test post-test non-equivalent group 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 & Khan, 2016). In the present study Intellectually Challenged students are divided into two groups viz. experimental and control groups. Experimental group was taught through instructional strategy based on Individualized Support Plan and the control group through the Existing Method presently followed in Schools. As the two groups were compared with respect to pre-test and post-test mean scores without equating the groups, the Pre-test- Post-test Non-equivalent group design was adopted for the study.

The design of the study is illustrated as follows.



X - Exposure of a group to experimental (treatment)

C - Exposure of a group to control condition

O - Observation/test administered

As a fourth phase of the study analysis of results was also done.

Phase I - The first phase included survey and content analysis. Diagrammatic representation of phase one is given in figure 2.

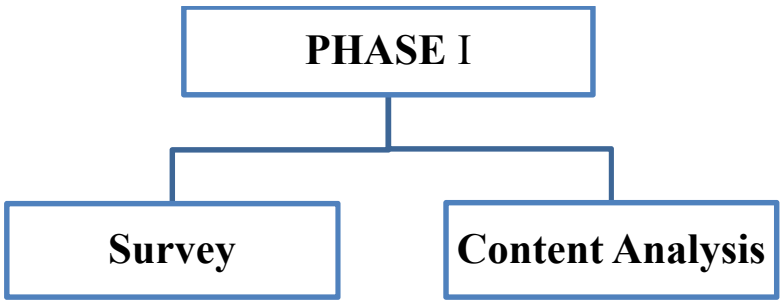


Figure 2. Diagrammatic representation of phase I

Phase II - Development of Individualized Support Plan

As intellectual disability is not an illness, a different type of plan is developed called Individualized Support Plan. The goal of ISP is to assess the individual needs and abilities of each person, and to develop a plan that best utilizes these competencies while eliminating the challenges that cause functional limitations. The ultimate aim of ISP is to create a match between a person's environment and their abilities in order to maximize their level of functioning and life satisfaction. ISPs will become most efficient when the design and implementation of the ISP is founded upon a collaborative alliance between the person with an intellectual disability, his or her family members, and an interdisciplinary team of professionals. Individual Support Plans address intellectual functioning through the provision of educational supports, economic supports, family supports and social supports.

In the present study the investigator analyzed the strength and weaknesses of intellectually challenged students and provided educational, family, economic and social supports in the least restrictive environment. Individualized Support Plan is based on the student's capabilities and demands of the environment and on entire range of supports from family, teachers, school

authorities and social organizations. The Individualized Support Planning is designed to assist the student to develop a vision and to attain outcome which will enhance the academic achievement of each and every Intellectually Challenged student. The Individual Support Plan is an investment in a student's life which will result in the enhancement of academic achievement at desired level.

Intellectually Challenged Students in the class room experience a lot of difficulties and problems in engaging in teaching learning activities. The span of attention of intellectually challenged students is less when compared to normal students. Teachers are unable to give proper attention due to lack of time, heavy syllabus and inadequate training to deal with intellectually challenged students. Hence they fail miserably in doing or completing the learning tasks properly. Most often they become the marginalized section in the class room. In this context ISP has got an important role in enhancing the academic achievement of Intellectually Challenged students.

The investigator identified the support needs of the students with intellectual disability. Then with the help of supervising teacher designed an Individualized Support Plan for intellectually challenged students. The plan is indented to know the effectiveness of ISP on achievement in social science in intellectually challenged secondary school students. The various phases involved in the development of ISP are detailed below.

Steps of Preparation of Instructional Strategy based on ISP

The steps involved in the preparation of instructional strategy based on Individualized Support Plan are:

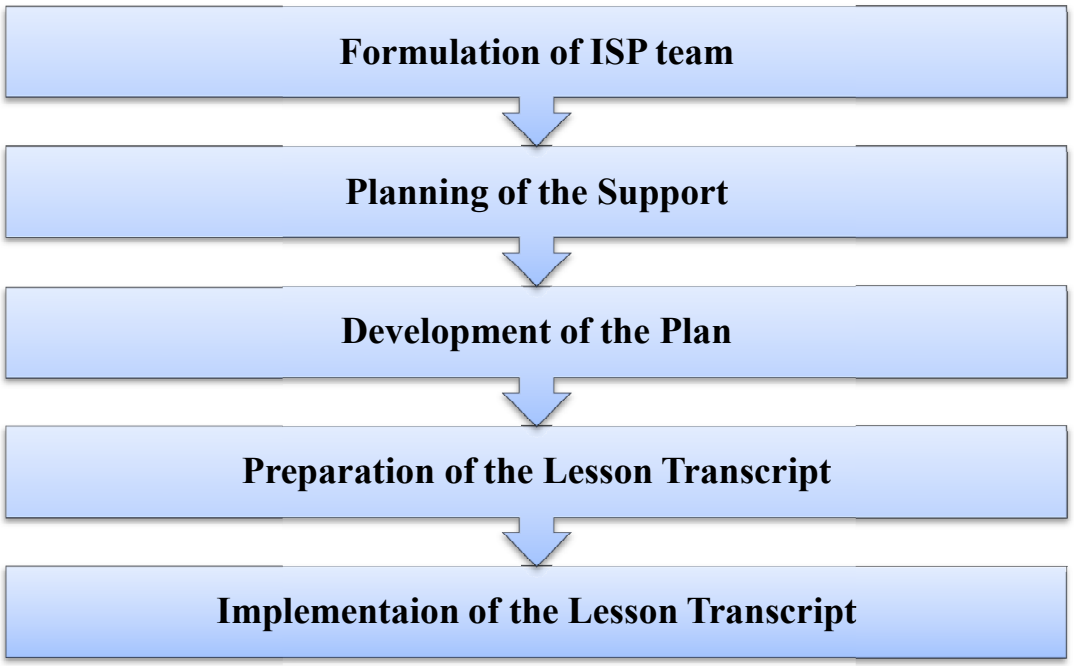


Figure 3. Diagrammatic representation of developmental phases of ISP

Step -1 Formulation of ISP team

After getting permission from Headmaster/ Principal of each school the investigator constituted an ISP team for each Intellectually Challenged student. The members of the team are:

a) The intellectually challenged student

b) Family members

c) The class teacher and resource teacher

d) Headmaster/ Principal

e) Two normal supporting students in the class

f) An expert in the field of education for intellectually challenged students

g) The Investigator

Family can play an important role in the education of Intellectually Challenged student. Proper orientation is given to the family members in order

to ensure support in the process of educating the student. In the school the class teacher has to play an important role in educating intellectually challenged student. The investigator discussed with the class teacher and resource teacher about the needs, abilities and shortcoming of each intellectually challenged student.. The investigator collected Student Profile from Resource teacher which included the details of the student like strength, success, shortcomings, support needed, family background, medical certificate details given by the concerned medical board etc. Experts from DIET, URC and BRC centers gave proper guidance as and when needed. The resource teacher took the role of a felicitator. The facilitators' credibility with the student, family and support systems greatly influenced the planning process. The investigator took the role of a coordinator. The meeting of the ISP team discussed the support needs and the kind of support to be given to the student.

Step 2 - Planning of the supports

The investigator held detailed discussion with experts in special education. This included faculties of university and college departments, DIET faculties, Coordinators of BRC and URC, Trainers of BRC and URC. The resource teachers provided Student Profile proforma of each intellectually challenged child. The student profile included strength, weaknesses, support needs, family background and the extent of disability. The investigator took information from family members, class teachers, peer group about the student in an informal way. The meeting of ISP team discussed all matters in detail. Thus the investigator identified the deficits and needs of the intellectually students. The major deficits identified are: short span of attention, delayed

cognitive functioning, low academic achievement, slow rates of learning, difficulty in understanding complex concepts and failure in achieving learning tasks properly. So they need a proper instructional strategy to overcome these deficits.

Step 3 - Development of the plan

On the basis of these inputs from various sources the investigator developed a Support Plan. The Support Plan include:

A) Educational Supports

B) Family Supports

C) Economic Supports and

D) Social Supports

A) Educational supports

The educational supports for intellectually challenged students are divided into two viz.

(a) Instructional Supports and

(b) Adaptive Supports

(a) Instructional Supports.

Instructional supports are given to the students while transacting the content. This include:

1. Instruction

- Split the lesson into small simple units
- Collaborated with two resource teachers

Multiple means of representing the content

- Working model

Suitable working model is very helpful in transacting the content. Use instructional sequence I do, We do, You do followed.

- Video session

The use of videos related to the content enhances the span of attention.

- Play way method

Some concepts can be easily taught by using play way method. For eg. The formation of Oxbo lakes.

- Oral strategy

Video session is supplemented by oral strategy

- Drawing and coloring

Provide opportunities to draw and color related to the topic of discussion

- Exhibit Charts

The main points related to the content are exhibited in charts.

At each stage the teacher and resource teachers evaluates each student by visual observation. Repetition of learning experience is provided for those who find difficulty in learning.

2. Scheduling

This means giving the student extra time to complete the assignment.

3. Clustering

The teacher provides the opportunity to work in small groups as and when needed.

4. Abstracts

The teacher gives the main points of the content to the students.

Multiple means of students' expression of content

Students can express the content learned in multiple ways. They are:

- Writing
- Drawing
- Speaking
- Making models
- Role playing

The teacher and resource teachers visually monitor student activity and gives individualized supports to those who find difficulty in expressing learned material.

(b) Adaptive Class room Supports

Adaptive class room supports are:

- Provide flexible furniture weightless chair, table, desks etc.
- Provide opportunities for purposeful movement
- Create a structured classroom eg. Designating separate areas for group and individual work.
- Help students organize their materials by using checklists, folders and containers.
- Ensure a smart class room where laptop, projector etc. are placed.
- Collaborate with other normal students.

B) Family supports

- The home setting should be pleasant and meet the child's physical and emotional needs.
- Always keep a positive emotional bond with the child.
- Family members should communicate positively with the child and utilize support services available.
- Help in doing home assignments.

C) Economic Supports

- Travelling expense for those who come from poor economic background.
- Expense for Uniform, books and other learning materials

D) Social supports

This includes Supports from Student Police Cadet, NSS, NCC, Scout & Guides, and other various clubs which are active in the school.

Step 4- Preparation of Lesson Transcripts

a) Lesson Transcripts based on Individualized Support Plan

The lesson transcript is developed by incorporating the above mentioned strategies such as working model, video session, drawing and coloring, play way method in each lesson plan. Twenty lesson transcripts were prepared by the investigator with the help of supervising teacher for the experimental group. Chapter selected was 'by the hands of nature' in the Std. IX social science text book. The topics include Land forms, along the river

banks, Land form created by river and River erosion. The concepts erosion, types of land forms, external forces which results in the formation of different types of land forms, rivers, stages of river flow, water fall, formation of 'V' valleys, meanders and oxbo lakes from Std. IX is transacted through different lesson transcripts spread over a period of 20 hours . A sample copy of Lesson transcripts based on ISP in Malayalam and English are appended as Appendices I and II respectively

b) Lesson Transcripts based on Existing Method

Twenty lesson transcripts were prepared for the control group. The chapter selected was 'by the hands of nature' in the IX standard social science text book. The concepts erosion, types of land forms, external forces which results in the formation of different types of land forms, rivers, stages of river flow, water fall, formation of 'V' valleys, meanders and oxbo lakes from Std. IX is transacted through different lesson transcripts based on Existing Method spread over a period of 20 periods of 45 minutes each . A sample copy of Lesson transcripts based on existing method in Malayalam is appended as Appendices III.

Step 5 - Implementation of the Lesson Transcript

The already prepared lesson transcripts were implemented in the class. Based on the nature of each concept a flexible combination of different strategies were used by the investigator.

Figure 4. Implementation of the lesson transcript

Phase III – Experimentation

Experimentation is the third phase of the study. Diagrammatic representation of phase III is presented in figure 5

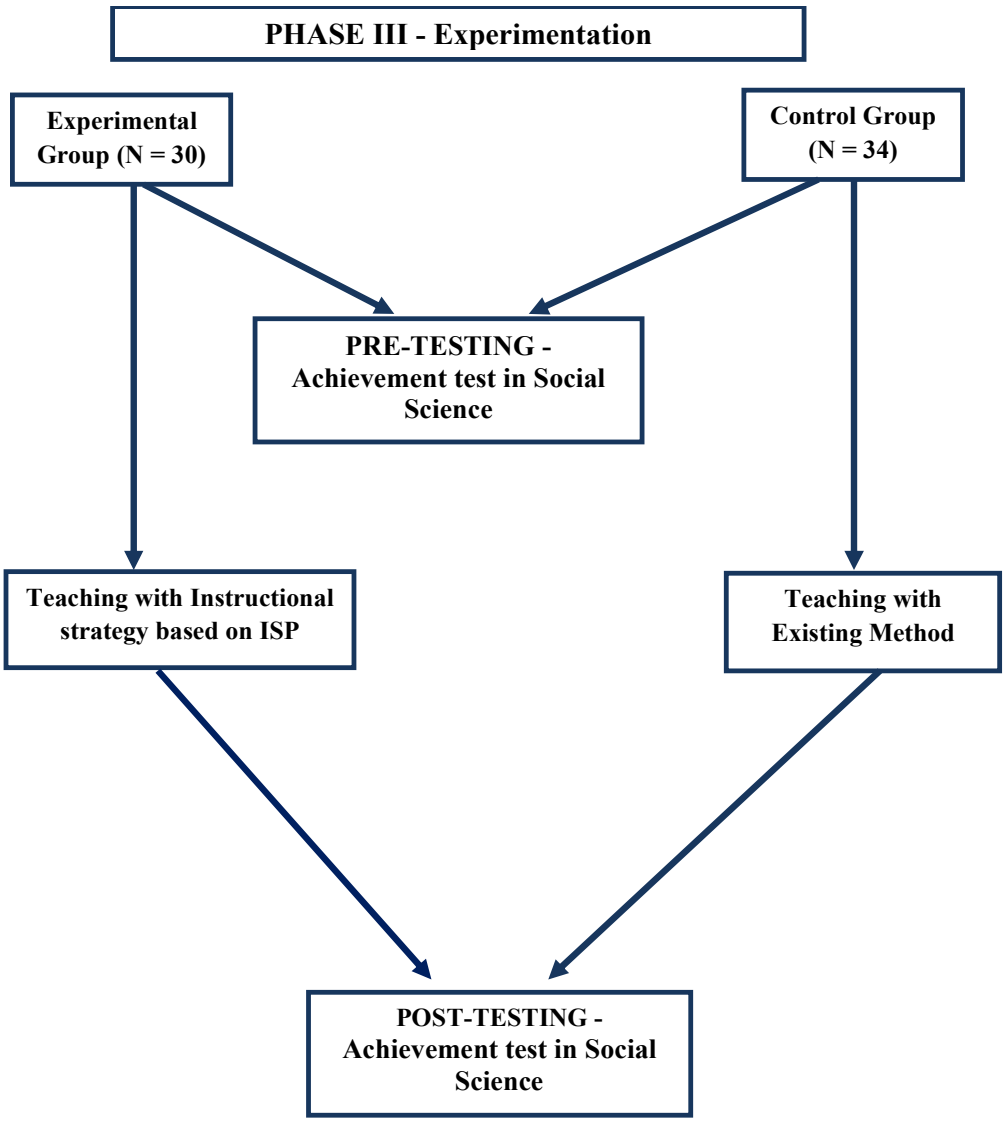


Figure 5. Diagrammatic representation of phase III

The investigator conducted experiment for the experimental group as per the instructional strategy based on Individualized Support Plan. The investigator conducted classes for thirty intellectually challenged students from ten schools based on ISP. Twenty classes were conducted by the investigator. The duration of each period was one hour.

The investigator conducted classes for control group of 34 intellectually challenged students based on the existing method of instruction. Twenty lesson

transcripts were prepared by the investigator. The duration of the period was 45 minutes.

Same topics were selected for both experimental and control groups. The concepts include erosion, types of land forms, external forces which results in the formation of different types of land forms, rivers, stages of river flow, water fall, formation of 'V' valleys, meanders and oxbo lakes from Std. IX Social Science text.

Phase IV – Analysis of the Results

In this phase investigator analyzed the effectiveness of Individualized Support Plan with the help of pre-test and post-test score obtained in phase three.

Tools Used for the Study

The quality of any research depends on the efficiency of tools employed and the procedure adopted for collecting data. In order to analyze the relationship between the select independent and dependent variables, specific tools and techniques were adopted and they are detailed in this section. The following tools were used in the present study,

1. Lesson transcript based on Individualized Support Plan (Ranjithlal & Koya, H.M.P., 2018)
2. Achievement test in social science (Ranjithlal & Koya, H.M.P., 2018)
3. Questionnaire for teachers (Ranjithlal & Koya, H.M.P., 2018)
4. Student Profile (Ranjithlal & Koya, H.M.P., 2018)

The detailed description of the development of tools were presented following sections

Lesson Transcript based on Individualized Support Plan (Ranjithlal & Koya, H.M.P., 2018)

Lesson transcripts based on ISP were prepared for intellectually challenged students. Each lesson was prepared by the following format.

1. Identification of learning outcomes
2. Description of concepts
3. Presentation of suitable learning activities
4. Evaluation through visual observation
5. Individualized remedial support
6. Expression of learned concepts by the students
7. Consolidation and follow-up activities

Twenty lesson transcripts were prepared by the investigator with the help of supervising teacher. Chapter selected was 'by the hands of nature' in the IX th standard social science text book. The topics include Land forms, Along the river banks, Land form created by river and River erosion. The concepts include types of land forms, erosion, external forces which results in the formation of different types of land forms, rivers, stages of river flow, water fall, formation of 'V' valleys, meanders and oxbo lakes.

Achievement Test in Social Science (Ranjithlal & Koya, H.M.P., 2018)

Achievement test in social science used as pre-test and post-test was constructed by the investigator with the help of supervising teacher. In the present study the achievement test was based on the topics selected for

treatment. The major stages in the construction of Achievement test in Social science are described as follows

Planning the test

The preparation of any class room test involves different stages. The most important primary stage is the planning stage. For this, the investigator studied thoroughly the curriculum, syllabus, and the textbook of Social science for the academic year 2018. For guidance the investigator consulted with subject experts and experienced teachers in social science. The investigator also referred available source book and text books for framing the items for the test. The books referred for the purpose include: Taxonomy of Educational Measurement (Bloom, 1979), Essentials of Educational Measurement (Ebel and Frisbie, 1991), and Educational Measurement and Evaluation (Nuhally, 1972).

Preparation of the test

Items for the achievement test in Social science were prepared on the basis of the major objectives of taxonomy of cognitive domain. The first statement in measuring achievement is to establish a clear statement of objectives. The investigator while planning the test will bear in mind the following aspects.

Weightage to objectives

Objectives are broad goals and are stated in terms of desired change in student behavior. Items were prepared on the basis of Blooms Taxonomy (Revised) of educational objectives. The weightage given to the categories of objectives under cognitive domain were:

1. Remembering
2. Understanding
3. Applying
4. Analyzing

The weightage given to the each objective is presented in Table 1

Table 1
Weightage to Objectives

Sl. No	Objective	Marks	Percentage
1	Remembering	7	23
2	Understanding	9	30
3	Applying	6	20
4	Analyzing	8	27
	Total	30	100

Weightage to content

The investigator analyzed and divided the entire content into four units and tried to give adequate weightage to each sub units. The weightage to sub unit is given in table 2

Table 2
Weightage to Content

Sl. No	Content	Marks	Percentage
1	Land forms	8	27
2	Along the river banks	10	33
3	River erosion	5	17
4	Land form created by river	7	23
	Total	30	100

Weightage to difficulty level

Table 3

Weightage to Difficulty Level

Sl. No	Difficulty level	Marks	Percentage
1	Easy	7	23
2	Average	15	50
3	Difficult	8	27
	Total	30	100

Weightage to form of questions

Table 4

Weightage to form of Questions

Sl. No	Form of Questions	Marks	Percentage
1	Objective	30	100
3	Short answer	0	0
4	Essay	0	0
	Total	30	100

Blue print of achievement test in social science

The investigator prepared a detailed question wise distribution of marks over specific topic on the basis of the weightage for instructional objectives, content etc. This is known as blue print. The blue print for the Achievement Test in social science corresponding weightage given to instructional objectives, content area and difficulty level are presented.

Based on the Blue print the investigator prepared 30 multiple choice questions in social science representing each objective and subjected to experts scrutiny and criticism.

Table 5

Blue Print for the Achievement Test in Social Science

Objectives / Form of question / Content	Remembering			Understanding			Applying			Analyzing			Mark	No Question
	O	S	E	O	S	E	O	S	E	O	S	E		
Land forms	(2)2			(2)2			(2)2			(2)2			8	8
Along the river banks	(2)2			(3)3			(2)2			(3)3			10	10
River erosion	(2)2			(1)1			(1)1			(1)1			5	5
Land form created by river	(1)1			(3)3			(1)1			(2)2			7	7
Sub total	(7)7			(9)9			(6)6			(8)8			30	30
Total	7			9			6			8			30	30

Try out test

The investigator used 40 items in the Achievement test for the try out. This test is administrated to 185 IXth standard students. By using this response sheets investigator carried out item analysis. For item analysis, score of each item from the students response sheet are entered in the excel sheet and total score of each item is found out. Then response sheets are arranged in descending order of their total score and the top most 27% (N= 50) and the lowest 27 % (N= 50) are separated. These are named upper and lower group. The Difficulty Index (DI) and Discriminating Power (DP) for each item is determined using the formulae

$$DP = \frac{U + L}{2N} \quad \text{and} \quad DP = \frac{U - L}{N}$$

Where U = Total marks scored by the upper group on one item

L = Total marks scored by the lower group on the same item

N = The number in each of the group.

Data and results of item analysis of Achievement in Social Science are presented in table. 6

Table 6

Item Analysis Data of Achievement Test in social science with Difficulty Index and Discriminating Power

Item No	Upper	Lower	Difficult Index	Discriminating Power	Selected/ Rejected
Item 1	33	17	0.5	0.32	Selected
Item 2	42	17	0.59	0.5	Selected
Item 3	39	20	0.59	0.38	Selected
Item 4	43	20	0.63	0.46	Selected
Item 5	43	25	0.68	0.36	Selected
Item 6	42	24	0.66	0.36	Selected
Item 7	45	18	0.63	0.54	Selected
Item 8	31	15	0.46	0.32	Selected
Item 9	43	23	0.66	0.4	Selected
Item 10*	**24**	**22**	**0.46**	**0.04**	**Rejected**
Item 11	32	16	0.48	0.32	Selected
Item 12	40	16	0.56	0.48	Selected
Item 13	41	25	0.66	0.32	Selected
Item 14	38	22	0.6	0.32	Selected
Item 15	47	19	0.66	0.56	Selected
Item 16	36	16	0.52	0.4	Selected
Item 17	28	6	0.34	0.44	Selected
Item 18	44	25	0.69	0.38	Selected
Item 19	44	24	0.68	0.4	Selected
Item 20	45	20	0.65	0.5	Selected
Item 21	29	11	0.4	0.36	Selected
Item 22*	**24**	**18**	**0.42**	**0.12**	**Rejected**
Item 23	36	7	0.43	0.58	Selected

Item No	Upper	Lower	Difficult Index	Discriminating Power	Selected/ Rejected
Item 24	45	22	0.67	0.46	Selected
Item 25	40	21	0.61	0.38	Selected
Item 26	40	18	0.58	0.44	Selected
Item 27	37	21	0.58	0.32	Selected
Item 28	32	14	0.46	0.36	Selected
Item 29	39	21	0.6	0.36	Selected
Item 30*	**27**	**15**	**0.42**	**0.24**	**Rejected**
Item 31	33	16	0.49	0.34	Selected
Item 32*	**33**	**29**	**0.62**	**0.08**	**Rejected**
Item 33*	**44**	**34**	**0.78**	**0.2**	**Rejected**
Item 34*	**26**	**18**	**0.44**	**0.16**	**Rejected**
Item 35	31	14	0.45	0.34	Selected
Item 36*	**26**	**14**	**0.4**	**0.24**	**Rejected**
Item 37*	**29**	**17**	**0.46**	**0.24**	**Rejected**
Item 38*	**34**	**33**	**0.67**	**0.02**	**Rejected**
Item 39*	**29**	**20**	**0.49**	**0.18**	**Rejected**
Item 40	28	12	0.4	0.32	Selected

* Rejected Items

For the final test investigator selected items with a Difficulty Index ranging from **0.4 to 0.7** and item whose Discriminating Power is greater than **0.3**. Data obtained in the item analysis is given in table. After item analysis ten questions were removed. Achievement test used in the further studies include 30 items.

A draft copy of the achievement test in social science, a final copy of the achievement test in social science (Malayalam and English) and final scoring key are appended as Appendices IV, Appendices V, Appendices VI and Appendices VII respectively.

Reliability of the test

Reliability of the Achievement test in Social Science was established using the KR 20 and test retest method. Obtained KR 20 coefficient is .743. To establish reliability by test rest method, the same test was administered to 35 students after a time period of three weeks. Obtained coefficient of correlation between these two tests score were .72. Both values showed that the tool was reliable.

Validity of the test

The investigator established the content and face validity of the test. Content validity of the test was established by the proper analysis of the content and objectives and by the preparation of the Blue Print. The investigator ensured face validity by consulting with expert teachers and eliminating unnecessary item according to their suggestions.

Questionnaire for Teachers (Ranjithlal & Koya, H.M.P.,2018)

To find the perception of secondary school teachers on problems, challenges of teachers faced while teaching intellectually challenged student's investigator prepared a questionnaire for teachers.

Planning of the test

The investigator decided to develop a questionnaire on class room behavior of intellectually challenged students. For this the investigator discussed with DIET faculties, resource teachers and other experts in the field. Then the investigator observed the inclusive classes adequately represented by the intellectually challenged students.

Preparation of items

On the basis of careful observation and discussions with experts the investigator identified two areas pertaining to the class room behavior of intellectually challenged students. They are

1. The problems and challenges faced by teachers in the teaching learning process of intellectually challenged students
2. Problems faced by the intellectually challenged students in actively participating in the teaching learning process

Based on these areas investigator prepared a questionnaire consisting of 20 items. For each item there were three options viz. agree, partially agree and disagree.

A final copy of the Questionnaire for teachers is appended as Appendices VIII.

Validity of the tool

The investigator ensured face validity of the tool by consulting with expert teachers and eliminating unnecessary item according to their suggestions.

Student Profile (Ranjithlal & Koya, H.M.P., 2018)

The details of students collected from resource teacher through administering a student profile proforma. The Performa includes strength and success of the student, challenges faced by the students, socio-economic status of the student, support need of the student etc. The proforma was filled by the resource teacher. This helps to identify the individualized supports required by

the student. Based on the student profile the ISP was prepared. A final copy of the student profile is appended as Appendices IX

Sample Used for the Study

The study was conducted by using both experimental and survey method. The details of sample selected for each method is described below.

Sample Selected for the Experimentation

Population of the present study covers the secondary school students with intellectual disability of Kerala state. Sample selection for experimentation was completed in three phases.

Phase 1-Identification of students with intellectual disability

To begin with 20 schools (Both Government and aided) in Kozhikode district were randomly selected without considering type of management and locale. About 70 students studying in IX Standard in these schools were selected for preliminary identification of students with intellectual disability in the first phase. Initial screening for identifying students with intellectual disability was done with the help of teachers in charge after giving them proper orientation.

Phase II- Diagnosis of students with Intellectual Disability

Students with Intellectual Disability were identified on the basis Medical Certificates issued by the concerned medical boards, school records and the opinion of resource teachers.

The criteria for diagnosing the students were the following.

a) Medical Certificates issued by the concerned medical boards

b) School records and

c) Resource and general teachers' opinion

Phase III- Selection of final sample for experimentation

The third phase was meant to select the final sample for experimentation. Sixty four students were selected for final experimentation. For giving individual attention and to improve the effectiveness of experimentation, the intervention was given to a small sample. 34 students of IX th Standard with intellectual disability from ten schools were selected as control group and 30 students of IXth Standard from ten schools were selected as experimental group. The experimental group was taught through Instructional Strategy based on Individualized Support Plan and the Control group through the existing method. These 64 students with intellectual disability served as the sample to find out the effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in Social Science. The break-up of the sample is presented in figure 6

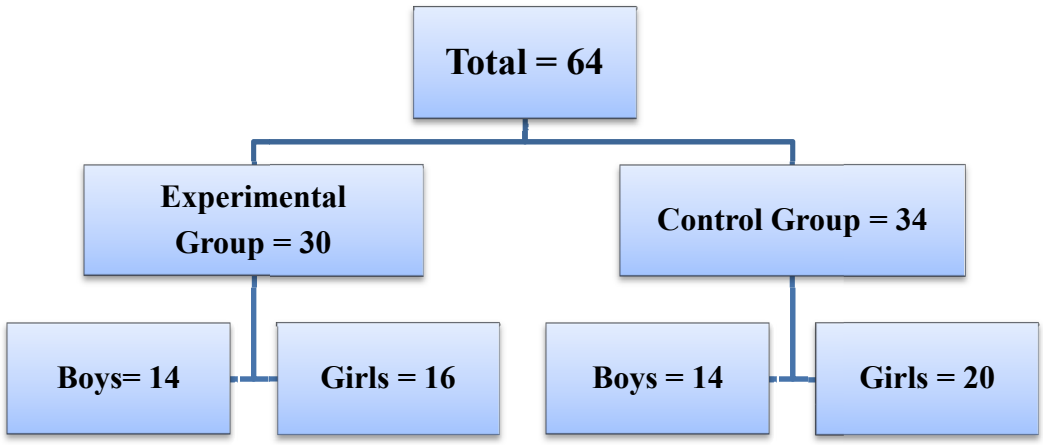


Figure 6. Break-up of the sample (Intellectually challenged students)

Sample Selected for Survey

Population of the present study covers the secondary school teachers of Kerala state. 154 teachers from 15 schools of Kozhikode district of Kerala state were selected as representative sample for the study. The break-up of the sample is presented in figure 7

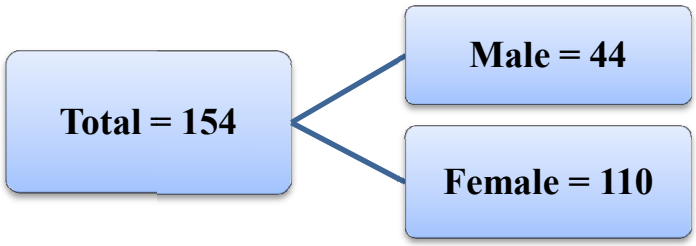


Figure 7. Break-up of the sample (secondary school teachers)

Data Collection Procedure, Scoring and Consolidation of Data

The investigator selected GVHSS, Nadakavu as the place for conducting the experiment for experimental group. As the school is situated in the heart of the city the students could reach there without any difficulty. The investigator secured the permission to conduct the experiment from the Headmaster. Classes for the control group were conducted at respective schools.

After completion of the lesson, both experimental and control group was given the same achievement test as post test .The scores on these test was used for determining the effectiveness of instructional strategy based on Individualized Support Plan over existing method.

The answer sheets of the pre-test and post-test which are correct in all respects were scored according to the correct answer. Scores of pre-test and post-test of experimental group and control group were tabulated separately. The scores obtained for the selected variables were then consolidated for final analysis.

Statistical Techniques Used for the Study

The following statistics are used in the data analysis procedure.

As a first step of data analysis, the important statistical constants such as mean, mode, median, standard deviation, skweness, standard error of skweness, Z value for skweness, kurtosis, standard error of kurtosis, Z value for kurtosis of the variable are calculated.

Major statistical analyses were carried out with the help of SPSS programme. Major statistical analyses employed are described below.

Test of Significance of Mean Difference for Large Independent Samples

For the present study, test of significance of difference between means for large independent samples were used to compare the relevant variable between experimental and control groups

The statistical technique was mainly used to test whether the experimental and control groups differ in Pre-test, posttest and Gain Scores without controlling the effect of the Covariates, for the large sample. The following formula suggested by Garrett (2004) for large sample was used

$$t = \frac{M_1 - M_2}{\sigma_D} \qquad \text{(Garrett, 2004)}$$

Where,

M_1 = mean of the first group

M_2 = Mean of the second group

σ_D =standard error

$$\sigma_D = \sqrt{\frac{{\sigma_1}^2}{N_1} + \frac{{\sigma_2}^2}{N_2}}$$

Where,

σ_1 = Standard deviation of the first group

σ_2 = Standard deviation of the second group

N_1 = Sample size of first group

N_2 = Sample size of second group.

One-tailed test of significance of difference between two means for large dependent groups

The critical ratio value is calculated by the formula

$$t = \frac{M_1 - M_2}{\sigma_D}$$ (Garrett, 2004)

Where, M_1 = mean of first group

M_2 = mean of second group

σ_D =standard error

$$\sigma_D = \sqrt{\frac{{\sigma_1}^2}{N_1} + \frac{{\sigma_2}^2}{N_2} - 2r\left(\frac{\sigma_1}{\sqrt{N_1}} \times \frac{\sigma_2}{\sqrt{N_2}}\right)}$$

Where,

σ_1 = standard deviation of first group

σ_2 = standard deviation of second group

N_1 = size of first group

N_2 = size of second group

r = correlation coefficient between the two sets of scores

Analysis of Covariance (ANCOVA)

To examine the Effectiveness of Individualized Support Plan over the existing method of teaching on the achievement in social science of intellectually challenged secondary school students, single factor ANCOVA with one co-variate is used. Analysis of covariance serves the purpose of statistically removing the effects of extraneous variables from the dependent variable. In the present study ANCOVA is employed to remove statistically the effect of confounding variables, the initial status of the subjects measured in terms of a pre-test.

Analysis of covariance uses the principle of partial correlation with analysis of variance. The effects of the relevant variables are partialed out and the resulting adjusted means of the gain scores are compared. Analysis of covariance is a method of analysis that enables the researcher to equate the pre-experiential status of the group in terms of relevant known variables (Best & Kahn, 2001). ANCOVA serves the purpose of statistically removing the effect of extraneous variables from the dependent variables (Ferguson, 1986). ANCOVA is an important method of analyzing the experiments carried under condition that otherwise would be unacceptable (Ferguson, 1996).

Before proceeding to ANCOVA the data used for analysis is subjected to a thorough examination with a view to know whether the data is sufficient to satisfy the major assumption suggested by Winer (1977),Ferguson(1996)to carry over the ANCOVA procedure. It is examined that the data is seen satisfied with the following assumption.

- The Dependent Variable which is under measurement should be normally distributed in the population.
- The treatment groups should be selected at random from the same population

- Within groups ,Variances must be approximately equal
- The contribution of Variance in the total sample must be additive.
- The regression of the final scores on initial scores should be basically the same in all groups.

Effect Size (Cohen's *d*)

Effect size calculations convey the relative magnitude of effectiveness of instructional strategy based on individualized support plan. To know the extent of influence of instructional strategy based on individualized support plan effect size was calculated using cohen's d . the formula used for the effect size calculation is the following.

Cohen's d for two groups with different N is calculated using the equation,

$$d = \frac{|M_1 - M_2|}{\sqrt{\frac{(N_1 - 1){S_1}^2 + (N_2 - 1){S_2}^2}{N_1 + N_2 - 2}}}$$

Cohen's d for within subject design is calculated using the equation,

$$d = \frac{|M_1 - M_2|}{\sqrt{{S_1}^2 + {S_2}^2 - (2rS_1S_2)}}$$

Effect size is calculated by using following equation.

Effect size, $\mathbf{r} = \frac{d}{\sqrt{d^2+4}}$ Where 'd' is Cohen's coefficient

The effect of instructional strategy based on Individualized Support Plan is very large when the value of 'r' is greater than or equal to 0.7 and the effect is large when the value of 'r' is greater than or equal to 0.5. when the 'r' value is greater than or equal to 0.3 the effect is medium and when the value is greater than or equal to 0.1 the effect is small.

ANALYSIS AND INTERPRETATION

- Analysis of problems and challenges faced by the teachers while dealing with intellectually challenged students in class room
- Effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in social science of intellectually challenged students

The study intended to develop and validate an Instructional Strategy based on Individualized Support Plan for intellectually challenged secondary school students. The major objective of the present study was to determine the effectiveness of instructional strategy based on Individualized Support Plan over the Existing Method of teaching on the achievement in social science of intellectually challenged secondary school students. Statistical procedure used in the present study includes preliminary analysis, pre test analysis, post test analysis, pretest-posttest analysis, gain score analysis, ANCOVA and effect size calculation. On the basis of results of the statistical analysis, the investigator tested the following hypotheses formulated

Hypotheses of the Study

1. There is no significant difference in the pretest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
2. There is no significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.
3. There is significant difference in the posttest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
4. There is significant difference in the posttest mean scores between experimental and control groups with regards to objectives of achievement

in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

5. There is significant difference between pretest and posttest mean scores of achievement in social science of the experimental group of Intellectually Challenged Secondary School Students.
6. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the experimental group
7. There is significant difference between pretest and posttest mean scores of achievement in social science of the control group of Intellectually Challenged Secondary School Students.
8. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the control group
9. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
10. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

11. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
12. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
13. The Instructional Strategy based on Individualized Support Plan has a very large effect on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

The whole analysis of the present study was divided into two sections.

Section I. Analysis of perception of teachers on problems, challenges and present situation of Intellectually Challenged Secondary School Students

Section II. Effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in social science in intellectually challenged secondary school students.

The collected data was analyzed using appropriate statistical techniques. The details of the data analysis used in the present study are presented under the following headings

- Analysis of problems and challenges faced by the teachers while dealing with intellectually challenged students in class room
- Preliminary Analysis
- Comparison of Achievement in social science between Experimental and Control group before intervention
- Comparison of Achievement in social science between Experimental and Control group after intervention
- Comparison of mean scores of pretest and posttest on achievement in social science and with regards to objectives of achievement in social science of the experimental group
- Comparison of mean scores of pretest and posttest on achievement in social science and with regards to objectives of achievement in social science of the control group
- Comparison of mean gain scores on achievement in Social Science and with regards to objectives of achievement in social science of experimental and control group
- Comparison of mean gain scores on achievement in Social Science and with regards to objectives of achievement in social science of experimental and control group with pretest score as covariates
- Effect size of the developed Instructional Strategy based on Individualized Support Plan on achievement in social science and objective of achievement- remembering, understanding, applying and analyzing

Section I -

Analysis of Perception of Teachers on Problems, Challenges and Present Situation of Intellectually Challenged Secondary School Students

The perception of teachers on problems, challenges and present situation of Intellectually Challenged Secondary School Students were collected by using questionnaire. Data and analysis of the results are presented in table 7.

Table 7

Perception of Teachers on Problems, Challenges and Present Situation of Intellectually Challenged Secondary School Students

Item No	Item		Agree	Partially Agree	Disagree
1	Intellectually challenged pupils shows interest in classroom learning activities	N	5	94	55
		Percentage	3.2	61.0	35.8
2	Lack of proper training for teachers to deal with intellectually challenged students creates difficulty in the class	N	85	66	3
		Percentage	55.2	42.9	1.9
3	Intellectually challenged students attend school regularly as their counterparts	N	49	62	43
		Percentage	31.8	40.3	27.9
4	The evaluation procedure for intellectually challenged students should be reformed	N	140	14	0
		Percentage	90.9	9.1	0
5	Inclusive education is very effective for intellectually challenged students	N	73	69	12
		Percentage	47.4	44.8	7.8
6	Other normal students in the class assist intellectually challenged students in learning activities	N	92	59	3
		Percentage	59.7	38.4	1.9
7	The activities of resource teachers are very effective for intellectually challenged students	N	130	22	2
		Percentage	84.4	14.3	1.3
8	Intellectually challenged students shows genuine interest in IT enabled class	N	98	51	5
		Percentage	63.6	33.2	3.2

Item No	Item		Agree	Partially Agree	Disagree
9	Intellectually challenged students keep genuine friendship with other normal students in the class	N	33	88	33
		Percentage	21.4	57.2	21.4
10	Intellectually challenged students face difficulty in recollecting the learned material properly	N	140	11	3
		Percentage	90.9	7.2	1.9
11	Intellectually challenged students experience difficulty in concentrating on the subject matter properly	N	146	7	1
		Percentage	94.8	4.6	.6
12	Intellectually challenged students shows difficulty in assimilating complex learning activities	N	141	12	1
		Percentage	91.6	7.8	.6
13	Role play can be used as an effective learning strategy for teaching intellectually challenged students	N	52	89	13
		Percentage	33.8	57.8	8.4
14	Presenting the learning activities in simple words by linking to the day to day life experience is very effective for intellectually challenged students	N	91	59	4
		Percentage	59.1	38.3	2.6
15	Genuine interest and helpful attitude of the parents in learning activities results in higher achievements of intellectually challenged students	N	129	23	2
		Percentage	83.8	14.9	1.3
16	Modernization of the curriculum is needed for making teaching of intellectually challenged students more effective	N	128	24	2
		Percentage	83.1	15.6	1.3
17	The existing curriculum creates lot of difficulties for intellectually challenged students in actively participating in learning activities	N	91	58	5
		Percentage	59.1	37.7	3.2
18	The intellectually challenged students shows Genuine interest in experimental and activity oriented method of teaching	N	65	82	7
		Percentage	42.2	53.2	4.5
19	Inclusive education is very useful for enhancing academic achievement of intellectually challenged students	N	83	62	9
		Percentage	53.9	40.3	5.8
20	The repetition of learning activities are essential for the proper achievement of intellectually challenged students	N	124	28	2
		Percentage	80.5	18.2	1.3

From table 7 it is clear that, 94 % secondary school teachers agreed that intellectually challenged students experience difficulty in concentrating on the subject matter properly. 83 % of teachers agreed modernization of the curriculum is needed for making teaching of intellectually challenged students more effective. 91.6 % teachers feels that intellectually challenged students shows difficulty in assimilating complex learning activities. 91% of teachers opinioned that evaluation procedure for intellectually challenged students should be reformed. 83.8 % of teachers agreed that genuine interest and helpful attitude of the parents in learning activities results in higher achievements of intellectually challenged students.

Section II -
Effectiveness of Instructional Strategy Based on Individualized Support Plan on Achievement in Social Science of Intellectually Challenged Students

This section of the analysis focused to find effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in social science in intellectually challenged secondary school students. The data collected was studied from different angles. This section includes preliminary analysis, pre test analysis, post test analysis, pretest-posttest analysis, gain score analysis ANCOVA and effect size calculation.

Preliminary Analysis

As a part of preliminary analysis, nature of distribution of pretest score and normality of the distribution of pretest score was tested. The statistical values like Mean, Median, Mode, Standard Deviation, Skewness and kurtosis were calculated.

To know the nature of distribution of the pre-test score of experimental and control group the descriptive statistics like mean and standard deviation for the both group were calculated. The obtained statistical values are presented in the table 8

Table 8

Mean and Standard Deviation of the Pretest Score of Achievement in Social Science (Total Score and Objective of Achievement in Social Science) of Experimental and Control Group

SI. No.	Variable	Experimental group (N=30)		Control group (N =34)	
		Mean	Std. Deviation	Mean	Std. Deviation
1	Achievement in Social Science	8.43	1.99	7.56	2.16
2	Remembering	2.4	0.813	2.0	1.25
3	Understanding	3.1	0.845	2.41	1.35
4	Applying	1.4	0.724	1.56	0.959
5	Analyzing	1.53	0.629	1.59	0.925

Table 8 shows that the mean pretest score on achievement in social science of experimental group is 8.43 with standard deviation 1.99. The mean score of learning objective Remembering is 2.4 with standard deviation 0.813. The mean score of learning objective Understanding is 3.1 with standard deviation 0.845. The mean score of learning objective Applying is 1.4 with standard deviation 0.724. The mean score of learning objective Analyzing is 1.53 with standard deviation 0.629.

Table 8 shows that the mean pretest score on achievement in social science of control group is 7.56 with standard deviation 2.16. The mean score of learning objective Remembering is 2.0 with standard deviation 1.25. The mean

score of learning objective Understanding is 2.41 with standard deviation 1.35. The mean score of learning objective Applying is 1.56 with standard deviation 0.959. The mean score of learning objective Analyzing is 1.59 with standard deviation 0.925.

The normality of the distribution of pretest score of achievement in social science of experimental and control group was tested and details are presented in table 9

Table 9

Descriptive Statistics of the Pretest Score of Achievement in Social Science of Experimental and Control Group

Statistics	Values	
	Experimental group	Control group
Mean	8.43	7.56
Median	8.5	8.0
Mode	8.0	8.0
Std. Deviation	1.99	2.16
Skewness	-0.509	0.077
Std. Error of Skewness	0.427	0.403
Z-Value (Skweness)	-1.19	0.191
Kurtosis	0.843	-0.705
Std. Error of Kurtosis	0.833	0.788
Z-Value (Kurtosis)	1.01	-0.894

Table 9 shows that mean, median and mode of achievement in social science of experimental group are 8.43, 8.5 and 8.00 respectively with standard deviation 1.99. The measures of central tendency viz., mean, median and mode are almost equal. The value of skewness is - 0.509 with

standard error .427. The Z–value calculated for skewness is -1.19. Since the Z-value is less than 1.96, the deviation from symmetry is not extremely high. The value of kurtosis is 0.843 with standard error 0.833. The z-value calculated by dividing kurtosis with its error is 1.01. Since the value is between -1.96 and +1.96, it can be concluded that the distribution is approximately meso-kurtic. These results reveal that the distribution of pretest score of achievement in social science of experimental group is approximately a normal distribution.

From table 9 it is clear that mean, median and mode of achievement in social science of control group are 7.56, 8.0 and 8.0 respectively with standard deviation 2.16. The measures of central tendency viz mean, median and mode are almost equal. The value of skewness is 0.077 with standard error .403. The Z–value calculated for skewness is 0.191. Since the Z-value is less than 1.96, the deviation from symmetry is not extremely high. The value of kurtosis is -0.705 with standard error 0.788. The z-value calculated by dividing kurtosis with its error is -0.894. Since the value is between -1.96 and +1.96, it can be concluded that the distribution is approximately meso-kurtic. These results reveal that the distribution of pretest score of achievement in social science of control group is approximately a normal distribution.

The histogram with normal curve and Q-Q plot were drawn for pretest score of achievement in social science of control and experimental group and are presented as figure 8, figure 9, figure 10 and figure 11.

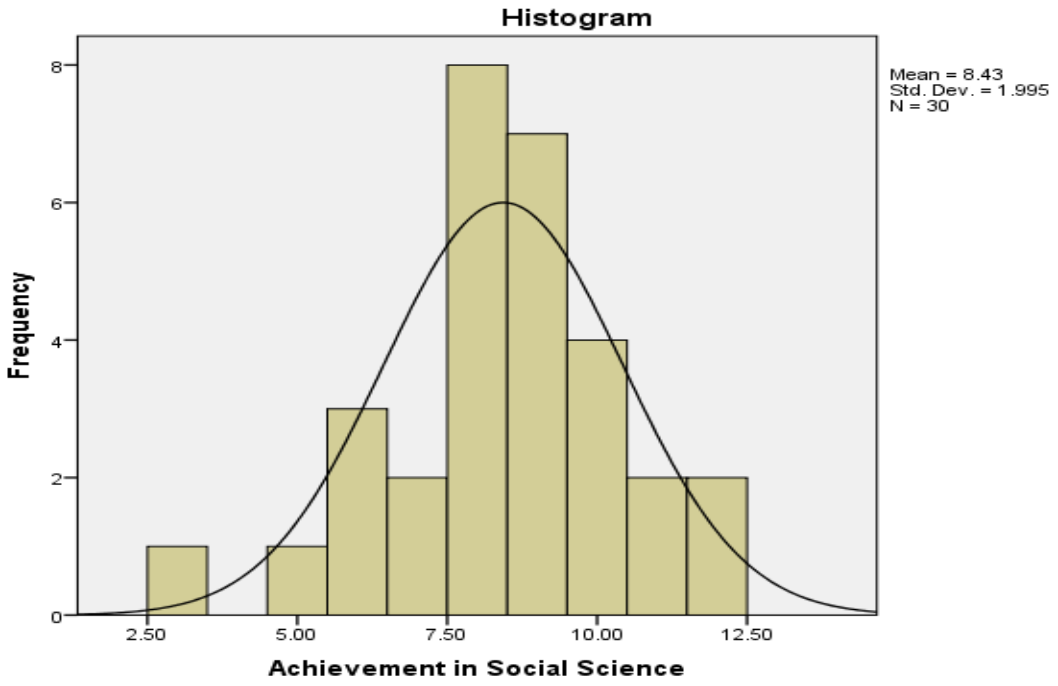


Figure 8. Histogram on the pretest scores of achievement in social science of experimental group

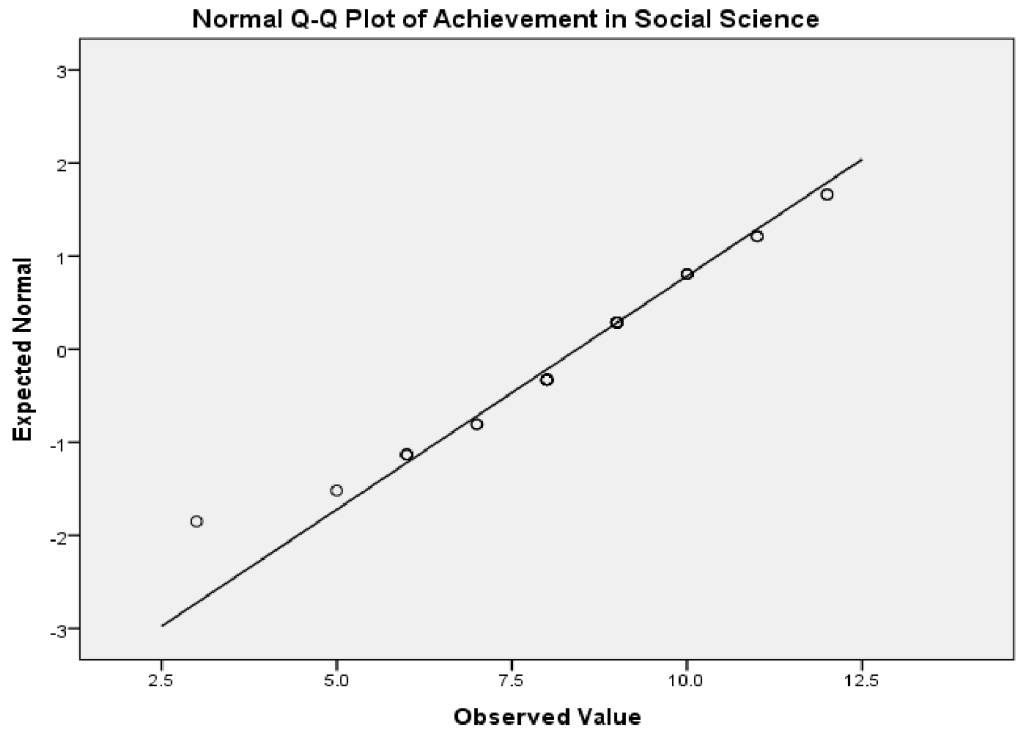


Figure 9. Normal Q-Q plot on the pretest scores of achievement in social science of experimental group

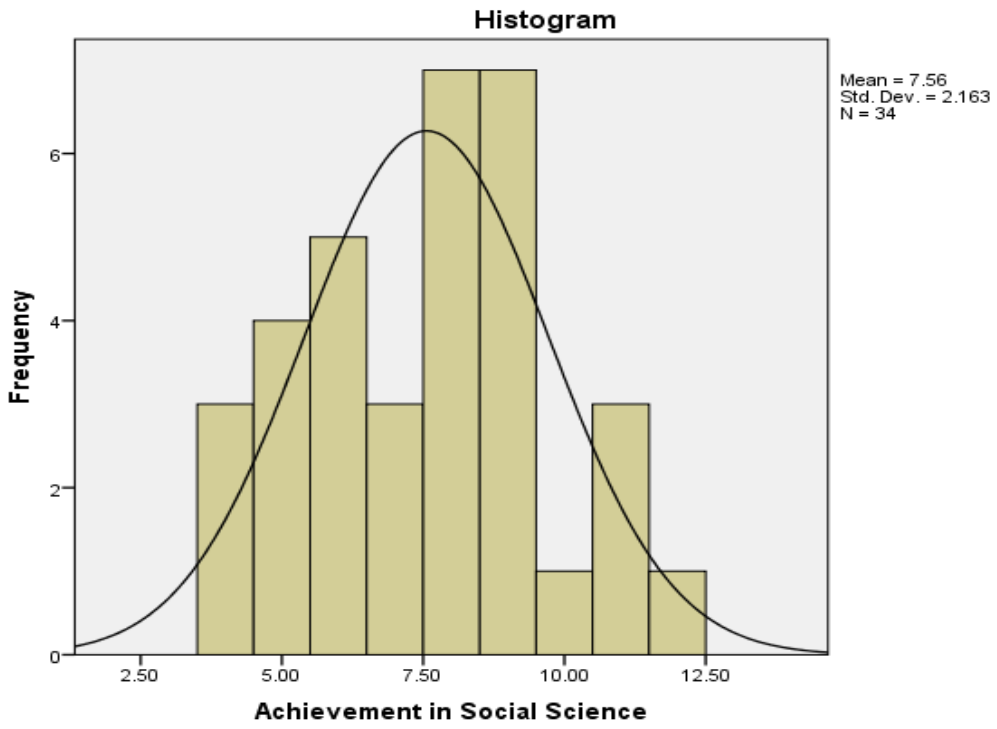


Figure 10. Histogram on the pretest scores of achievement in social science of control group

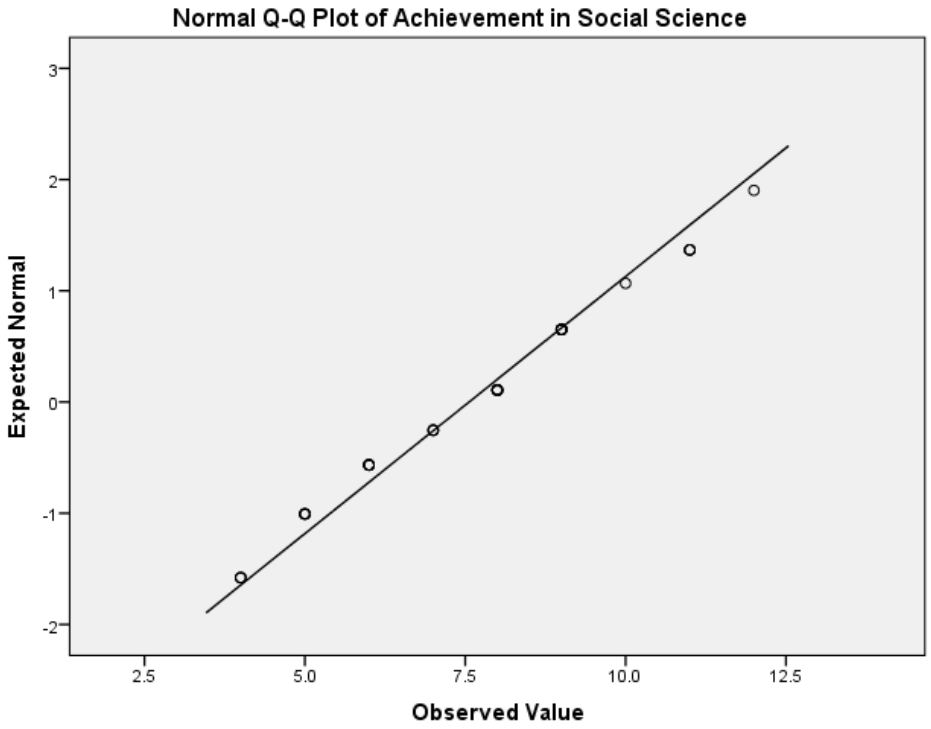


Figure 11. Normal Q-Q plot on the pretest scores of achievement in social science of control group

Differential Statistics

Major objective of this study is to find out the effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in social science in intellectually challenged secondary school students. In this section, investigator compared the teaching methods (teaching with Individualized Support Plan and Existing Method of teaching) with respect to academic achievement at pre-test, post-test and gain score. For this purpose investigator used independent sample t test, paired sample t test and Analysis of covariance (ANCOVA). Details of the analysis are presented in the following sections under relevant headings.

Comparison of Achievement in Social Science between Experimental and Control Group before Intervention

To test the status of achievement between the experimental and control groups before intervention, test of significance of difference between mean pretest scores on achievement in social science was done. Comparison was made for total score in achievement in social science and with regards to learning objectives.

Results of comparison of mean pretest score in achievement in social science are showed in table 10.

Table 10

Comparison of Mean Pretest Score of Achievement in Social Science between Experimental and Control Groups

Variable	Group	N	Mean	Std. Deviation	t-value	Level of significance
Achievement in Social Science	Experimental group	30	8.43	1.99	1.67	NS
	Control group	34	7.56	2.16		

NS- Not Significant

Table 10 shows that, before intervention, there is no significant difference between the mean scores of achievement in social science of the Experimental group (M= 8.43, SD = 1.99) and Control group (M= 7.56, SD = 2.16) [t = 1.67; p >.05]. Hence before intervention, experimental group and control group are equal in achievement in social science. Graphical representation of mean and standard deviation of experimental group and control group are presented in figure 12.

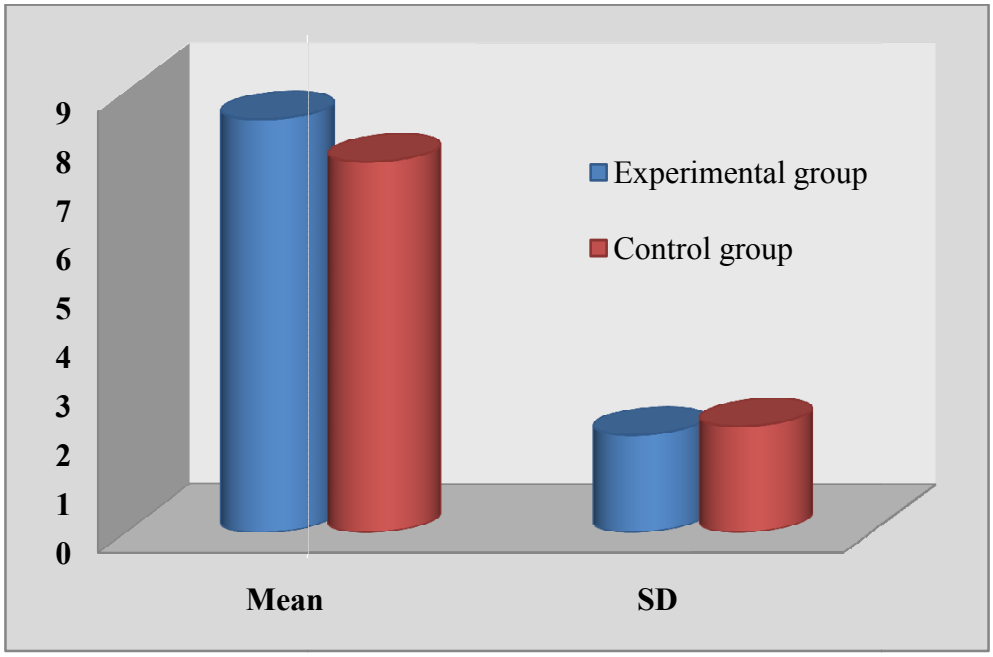


Figure 12. Mean and standard deviation of pre-test score in achievement in social science of experimental group and control group

To test the status of achievement in social science with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing between the experimental and control groups before intervention, test of significance of difference between mean pretest scores on each objectives of achievement in social science was done. Results of the mean comparison is tabulated in table 11

Table 11

Comparison of Mean Pretest Score of Achievement in Social Science between Experimental and Control Groups - with regards to Objectives of Achievement in Social Science

Variable	Group	N	Mean	Std. Deviation	t-value	Level of Significance
Remembering	Experimental group	30	2.40	.813	1.49	NS
	Control group	34	2.00	1.25		
Understanding	Experimental group	30	3.10	.844	2.47	0.05
	Control group	34	2.41	1.35		
Applying	Experimental group	30	1.40	.723	0.739	NS
	Control group	34	1.55	.959		
Analyzing	Experimental group	30	1.53	.628	.280	NS
	Control group	34	1.59	.924		

NS- Not Significant

Table 11 shows that, before intervention, there is no significant difference between the mean achievement scores of learning objective Remembering of the Experimental group (M= 2.40, SD = 0.813) and Control group (M=2.00, SD = 1.25) [t = 1.49; p >.05]. Hence before intervention, experimental group and control group are equal in achievement in learning objective remembering.

From table 11 it is clear that, before intervention, there is a significant difference in the mean achievement scores of learning objective Understanding of the Experimental group (M= 3.10, SD = 0.844) and Control group (M=2.41, SD = 1.35) [t = 2.45; p <.05]. Hence before intervention, experimental group and control group are differ in achievement in learning objective understanding.

Before intervention, there is no significant difference between the mean achievement scores of learning objective Applying of the Experimental group

(M= 1.40, SD = 0.723) and Control group (M=1.55, SD = 0.959) [t = 0.739; p >.05]. Hence before intervention, experimental group and control group are equal in achievement in learning objective applying.

Results shows that, before intervention, there is no significant difference between the mean achievement scores of learning objective Analyzing of the Experimental group (M=1.53, SD =0.628) and Control group (M=1.59, SD = 0.924) [t = 0.280; p >.05]. Hence before intervention, experimental group and control group are equal in achievement in learning objective analyzing.

Graphical representation of mean pretest scores of experimental and control group with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing are presented in figure 13. And to get a better view on the level achievement in social science and with regards to learning objectives of the experimental and control group, smoothed cumulative percentage frequency curves are drawn and are presented as figure 14.

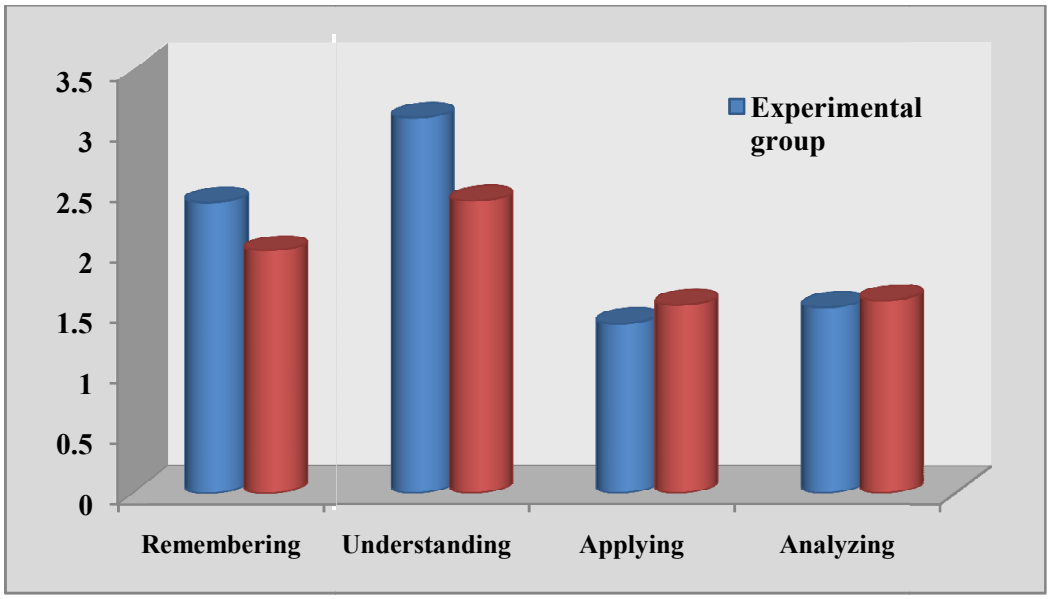


Figure 13. Mean pretest score comparison with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing between experimental and control groups

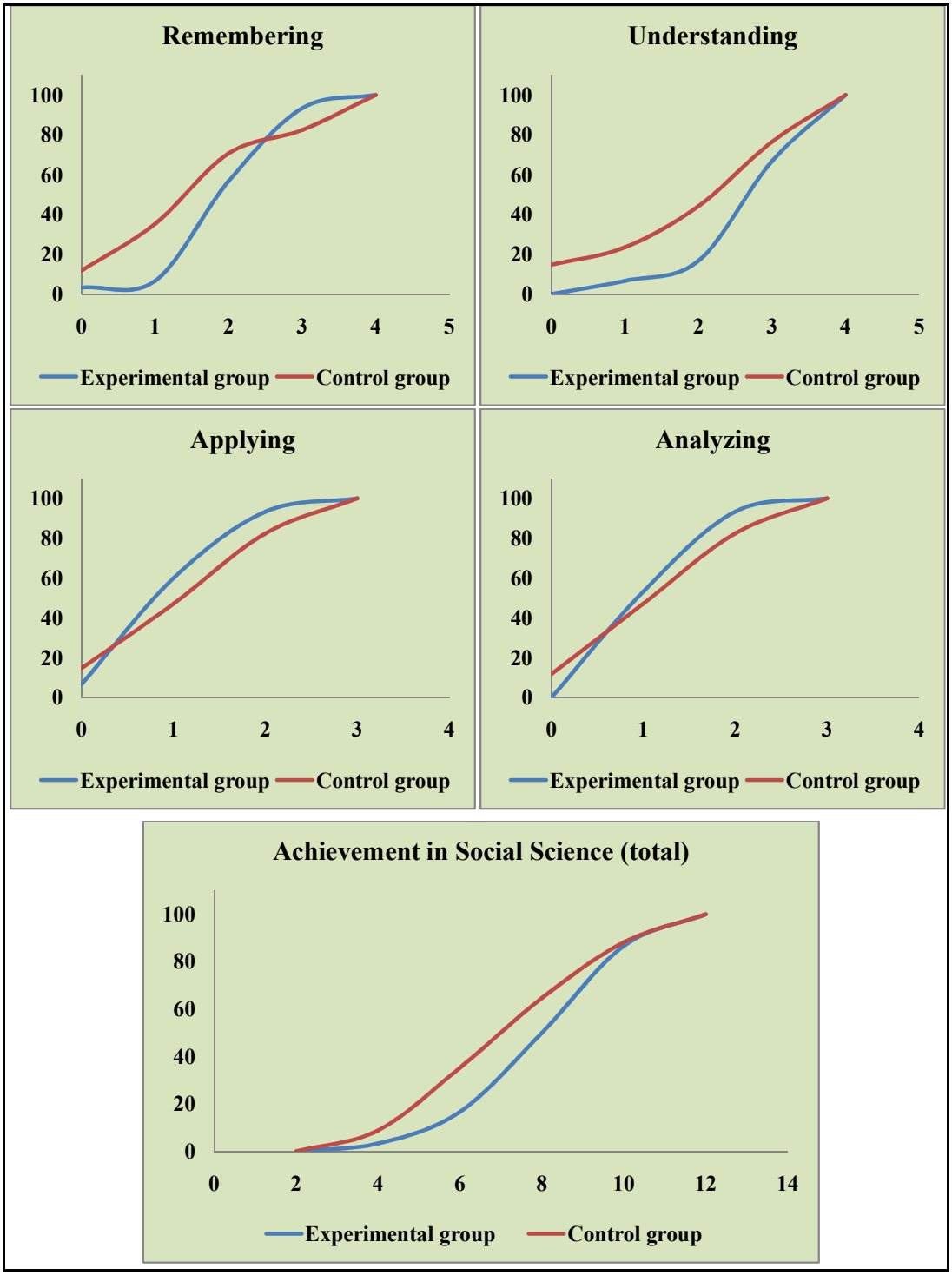


Figure 14. Smoothed cumulative percentage frequency curves of comparison of pretest scores of 'achievement in social science total and with regards to objectives of achievement in social science' between experimental and control groups.

Comparison of Achievement in Social Science between Experimental and Control Group after Intervention

To test the effect of Individualized Support Plan on achievement in social science among intellectually challenged secondary school students, test of significance of different between mean posttest scores in the experimental and control groups was done. Comparison was made for total score in achievement in social science and with regards to learning objectives.

The Results of comparison of mean posttest score in achievement in social science are showed in table 12.

Table 12

Comparison of Mean Posttest Score of Achievement in Social Science between Experimental and Control Groups

Variable	Group	N	Mean	Std. Deviation	t-value	Level of Significance
Achievement in Social Science	Experimental group	30	23.50	2.25	17.51	0.01
	Control group	34	9.97	3.79		

Table 12 shows that, after the intervention of teaching strategy, there is significant difference in the mean scores of achievement in social science of the experimental group (M= 23.50, SD =2.25) and control group (M= 9.97, SD = 3.79) [t = 17.51; $p<0.01$]. Mean scores of achievement in social science of experimental group is higher than achievement in social science of control group. That is in the post test, students using the Instructional Strategy based on Individualized Support Plan has a higher score on achievement in social science compared to that of students not using Individualized Support Plan.

Bar diagrams for comparison of posttest mean scores and standard deviation of achievement in social science of the experimental and control group is given as figure 15.

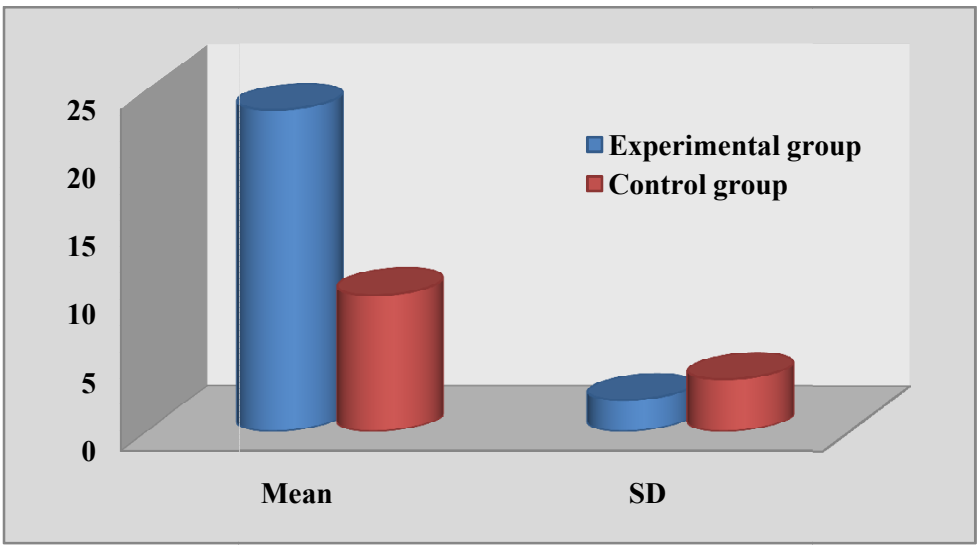


Figure 15. Mean and standard deviation of posttest score in achievement in social science of experimental group and control group

To test the effect of Instructional Strategy based on Individualized Support Plan on achievement in social science with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among intellectually challenged secondary school students, test of significance of difference between mean posttest scores on each learning objective was done. Results of the mean comparison is presented in table 13.

Table 13

Comparison of Mean Posttest Scores of Achievement in Social Science between Experimental and Control Groups-with Regards to Objectives of Achievement in Social Science

Variable	Group	N	Mean	Std. Deviation	t-value	Level of significance
Remembering	Experimental group	30	5.80	.610	12.66	0.01
	Control group	34	2.70	1.26		
Understanding	Experimental group	30	6.80	1.47	6.86	0.01
	Control group	34	3.70	2.11		
Applying	Experimental group	30	4.83	.592	11.14	0.01
	Control group	34	1.88	1.41		
Analyzing	Experimental group	30	6.06	.868	20.50	0.01
	Control group	34	1.67	.843		

Table 13 shows that, after intervention, there is a significant difference between the mean achievement scores of learning objective Remembering of the Experimental group (M= 5.80, SD = 0.610) and Control group (M=2.70, SD=1.26) [t = 12.66; p <.01]. Mean score of the experimental group is higher than that of control group. Hence Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective remembering.

Table 13 revealed that, after intervention, there is a significant difference between the mean achievement scores of learning objective Understanding of the Experimental group (M= 6.80, SD = 1.47) and Control group (M=3.70, SD = 2.11) [t = 6.86; p <.01]. Mean score of the experimental group is higher than that of control group. Hence Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective understanding.

Table 13 shows that, after intervention, there is a significant difference between the mean achievement scores of learning objective Applying of the Experimental group (M=4.83, SD= 0.592) and Control group (M=1.88, SD=1.41) [t = 11.14; p <.01]. Mean score of the experimental group is higher than that of control group. Hence Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective Applying.

Table 13 revealed that, after intervention, there is a significant difference between the mean achievement scores of learning objective Analyzing of the Experimental group (M= 6.06, SD=0.868) and Control

group (M=1.67, SD=0.843) [t = 20.50; p <.01]. Mean score of the experimental group is higher than that of control group. Hence Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective analyzing.

Graphical representation of mean posttest scores of experimental and control group with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing are presented in figure 16. And to get a better view on the level achievement in social science and with regards to learning objectives of the experimental and control group, smoothed cumulative percentage frequency curves are drawn and are presented as figure 17.

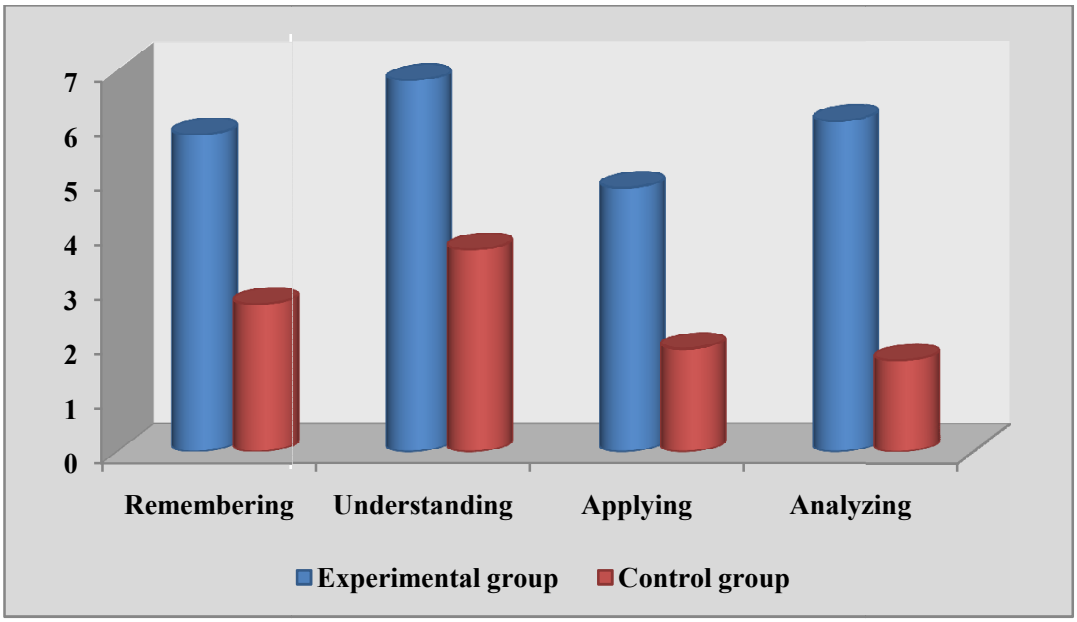


Figure 16. Mean posttest score comparison with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing between experimental and control groups

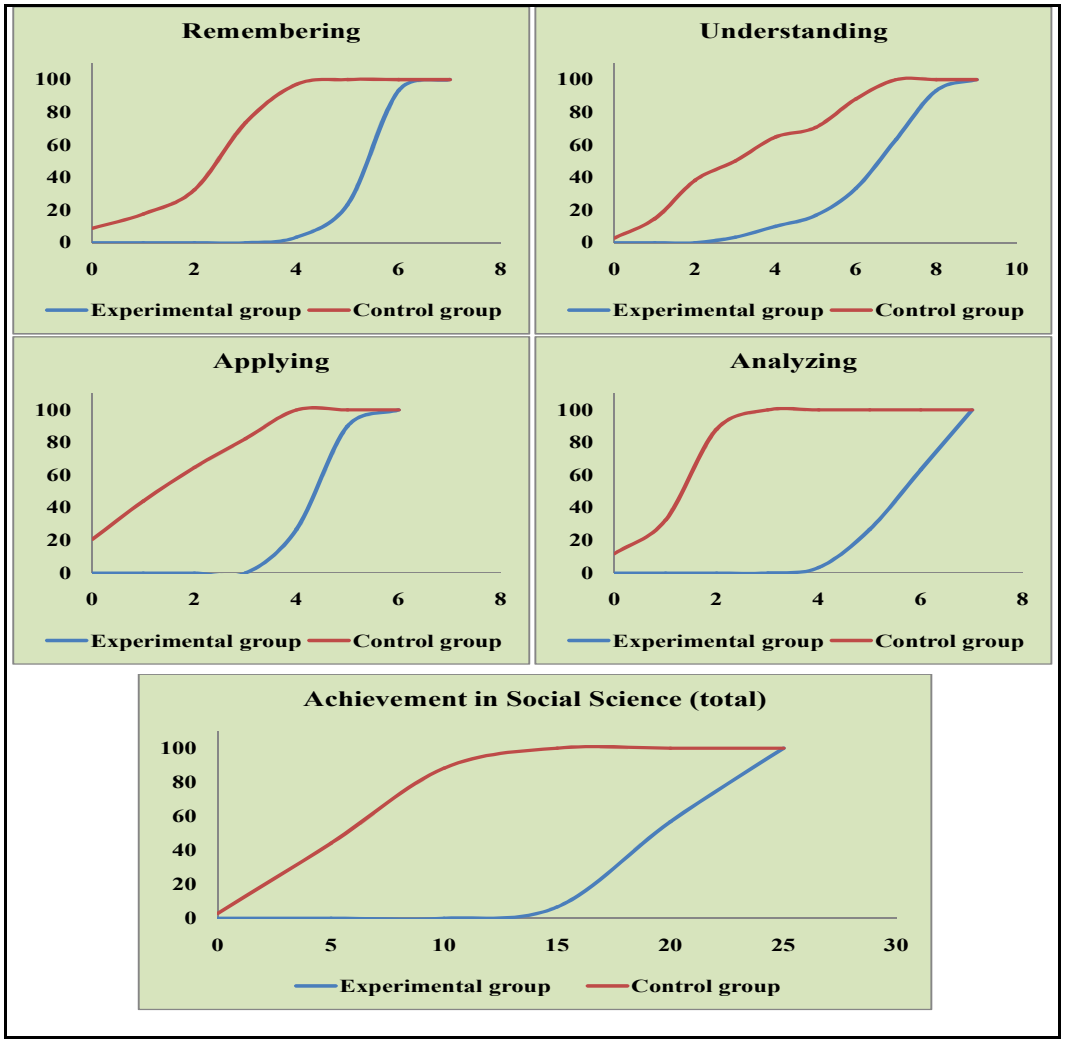


Figure 17. smoothed cumulative percentage frequency curves of comparison of posttest scores of 'achievement in social science total and with regards to objectives of achievement in social science' between experimental and control groups.

Comparison of Mean Scores of Pretest and Posttest on Achievement in Social Science and with Regards to Objectives of Achievement in Social Science of the Experimental Group

To find out the effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing, the pre test and post test scores of experimental group were compared by finding its value using paired t-test and tested its significance.

The results of test significance of the difference between mean pretest and posttest scores of achievement in social science of experimental group are presented in table 14.

Table 14

Comparison of Mean Scores of Achievement in Social Science in Pretest and Posttest of Experimental Group (N =30)

Variable	Test	Mean	Std. Deviation	r	t-value	Level of significance
Achievement in Social Science	Post-test	23.50	2.25	.27	31.12	0.01
	Pre test	8.43	1.99			

The t-value obtained by Comparison of mean scores of Achievement in social science in pretest and posttest of experimental group was determined .From table, it can be seen that the critical ratio for mean score on Achievement in social science in the pretest and posttest is 31.12 and coefficient of correlation is .27 for the experimental group, the t-value is greater than tabled value (2.58) at 0.01 level of significance. Hence it can be inferred that the mean score on achievement in social science in the posttest is significantly higher than that of pretest for the students using the Instructional Strategy based on Individualized Support Plan.

Bar diagrams for Comparison of mean scores and standard deviation of Achievement in social science in pretest and posttest of experimental group is presented as figure 18.

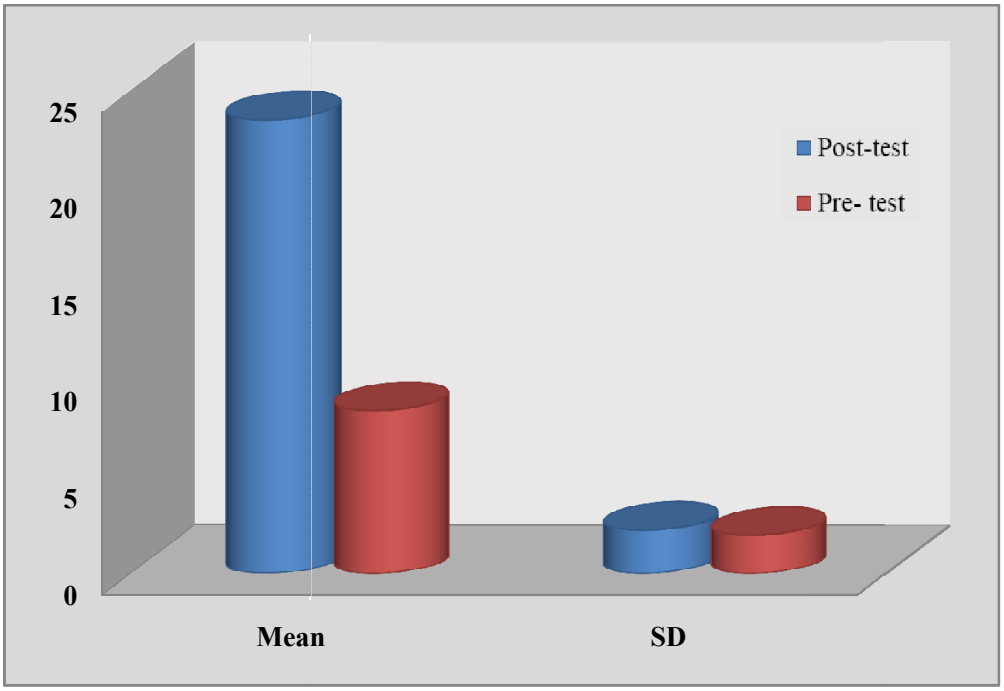


Figure 18. Mean and standard deviation of pretest and posttest score on achievement in social science of experimental group

After the intervention of Instructional Strategy based on Individualized Support Plan to the experimental group, the mean and standard deviation based on the various objectives of achievement test of the experimental group was found out by conducting the same achievement test carried out before the experiment. The pretest and posttest scores of experimental group were compared by finding its value using paired t-test and tested it for significance. The results of test of significance of the difference between mean pretest and posttest scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of experimental group are given in table 15.

Table 15

Comparison of Mean Pretest and Posttest Scores of Achievement in Social Science of Experimental Group - with Regards to Objectives of Achievement in Social Science (N= 30)

Variable	Test	Mean	Std. Deviation	r	t-value	Level of significance
Remembering	Post-test	5.80	.610	.028	18.56	0.01
	Pre test	2.40	.813			
Understanding	Post-test	6.80	1.47	-.011	11.89	0.01
	Pre test	3.10	.845			
Applying	Post-test	4.83	.592	.000	20.11	0.01
	Pre test	1.40	.724			
Analyzing	Post-test	6.06	.868	-.194	21.28	0.01
	Pre test	1.53	.629			

The table values for significance at .05 and .01 level are 1.96 and 2.58. The t-value obtained by comparing the mean pretest and posttest scores on various objectives of Achievement in Social Science of intellectually challenged students in experimental group was determined. The t-value obtained for the objective Remembering, $t(29) = 18.56$, $p < .01$, which is greater than the table values and was significant at .01 level. The t-value attained for the objective Understanding, $t(29) = 11.89$, $p < .01$, which is greater than the table values and was significant at .01 level. The t-value for the objective Applying was $t(29) = 20.11$, $p < .01$, which is greater than the table values and was significant at .01 level. The t-value acquired for the objective Analyzing was $t(29) = 21.28$, $p < .01$, which is greater than the table values and was significant at .01 level. In all cases the mean of pretest score of experimental group was smaller than the mean of post test score. Hence it can be interpreted that Instructional Strategy based on Individualized Support Plan is

effective to enhance the achievement in social science of intellectually challenged students based on the objectives of achievement.

Graphical representation of mean pretest and posttest scores of experimental group with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing are presented in figure 19. And to get a better view on the level achievement in social science and with regards to learning objectives of the experimental group, smoothed cumulative percentage frequency curves are drawn and are presented as figure 20.

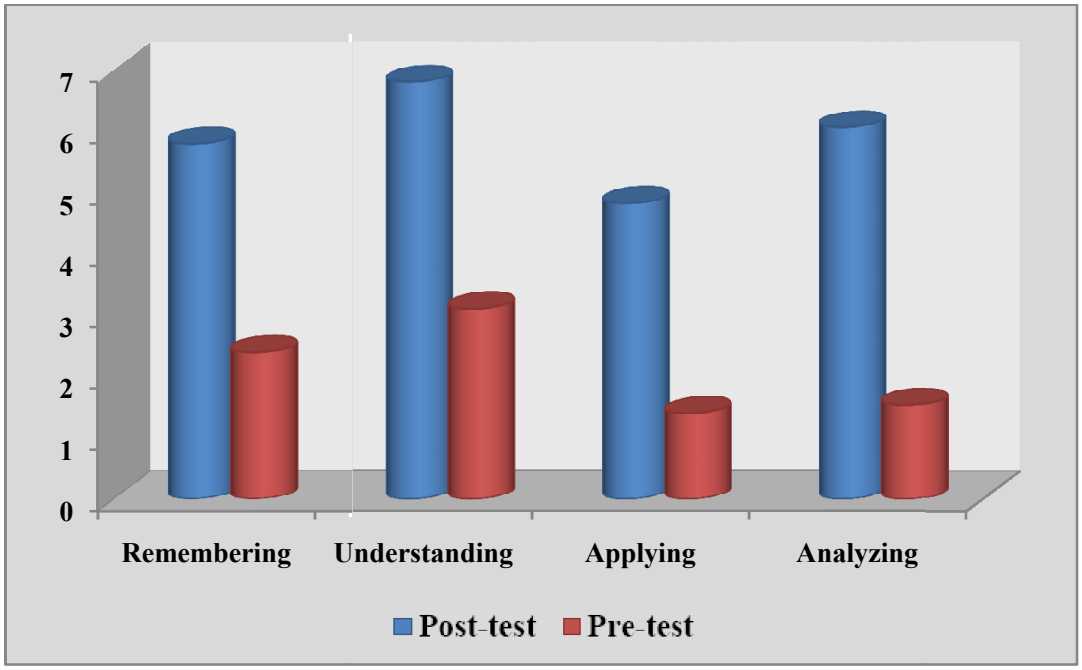


Figure 19. Mean pretest and posttest score comparison with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of experimental groups

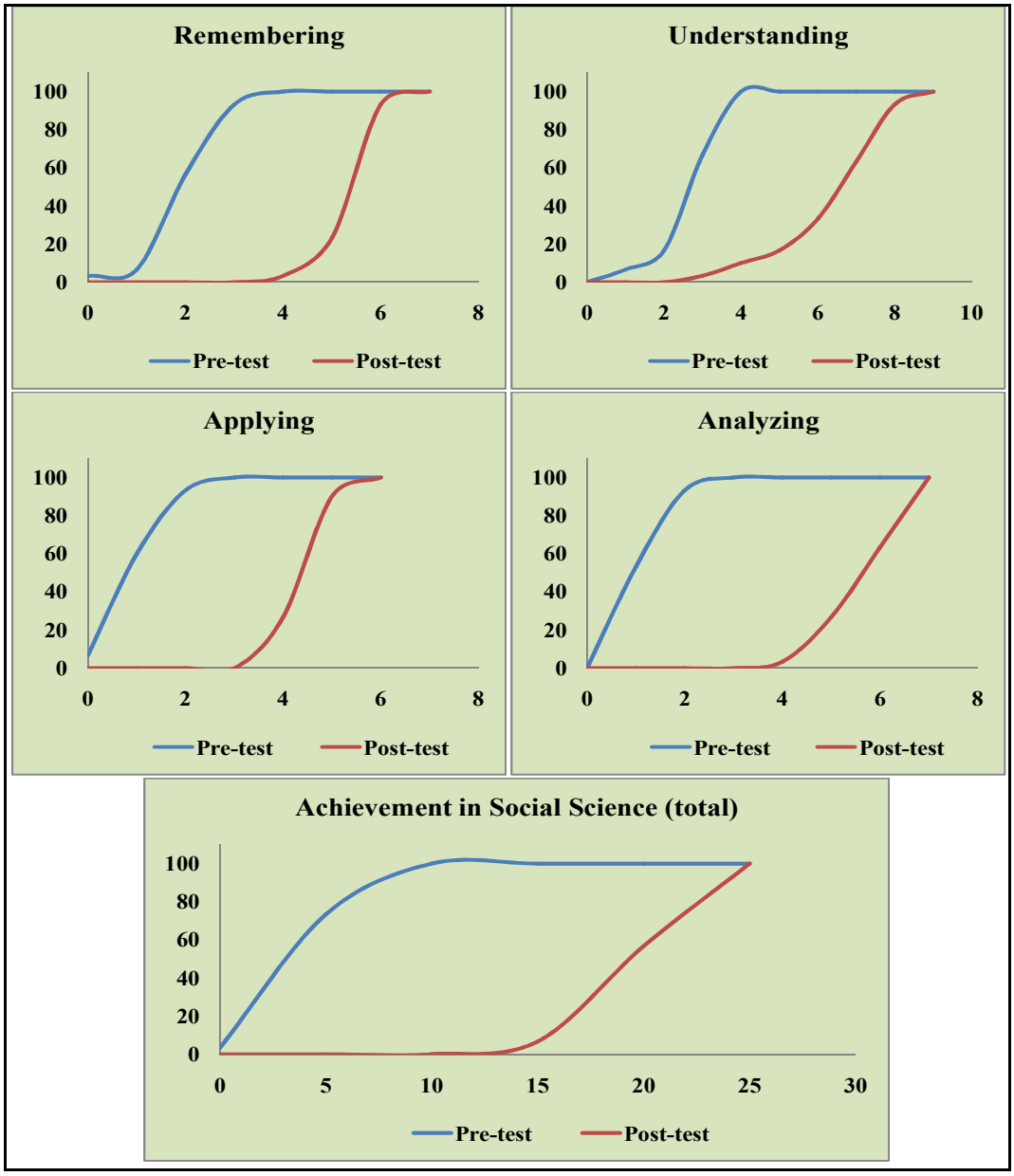


Figure 20. Smoothed cumulative percentage frequency curves of comparison of pretest and posttest scores of 'achievement in social science total and with regards to objectives of achievement in social science' of experimental groups.

Comparison of mean scores of pretest and posttest on achievement in social science and with regards to objectives of achievement in social science of the control group

The mean score on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding,

Applying and Analyzing in both pretest and posttest scores of control group were compared by finding its value using paired t-test and tested its significance.

The results of test significance of the difference between mean pretest and posttest scores of achievement in social science of control group are presented in table 16.

Table 16

Comparison of Mean Scores of Achievement in Social Science in Pretest and Posttest of Control Group (N =34)

Variable	Test	Mean	Std. Deviation	r	t-value	Level of significance
Achievement in Social Science	Post-test	9.97	3.79	.61	4.68	0.01
	Pre test	7.56	2.16			

The critical ratio obtained by comparison of mean scores of achievement in social science in pretest and posttest of control group was determined .From table, it can be seen that the critical ratio for mean score on achievement in social science in the pretest and posttest is 4.68 and coefficient of correlation is .61 for the control group, the t-value is greater than tabled value (2.58) at 0.01 level of significance. Hence it can be inferred that the mean score on achievement in social science in the posttest is significantly higher than that of pretest for the students not using the Individualized Support Plan.

Bar diagrams for Comparison of mean scores and standard deviation of achievement in social science in pretest and posttest of control group is presented as figure 21.

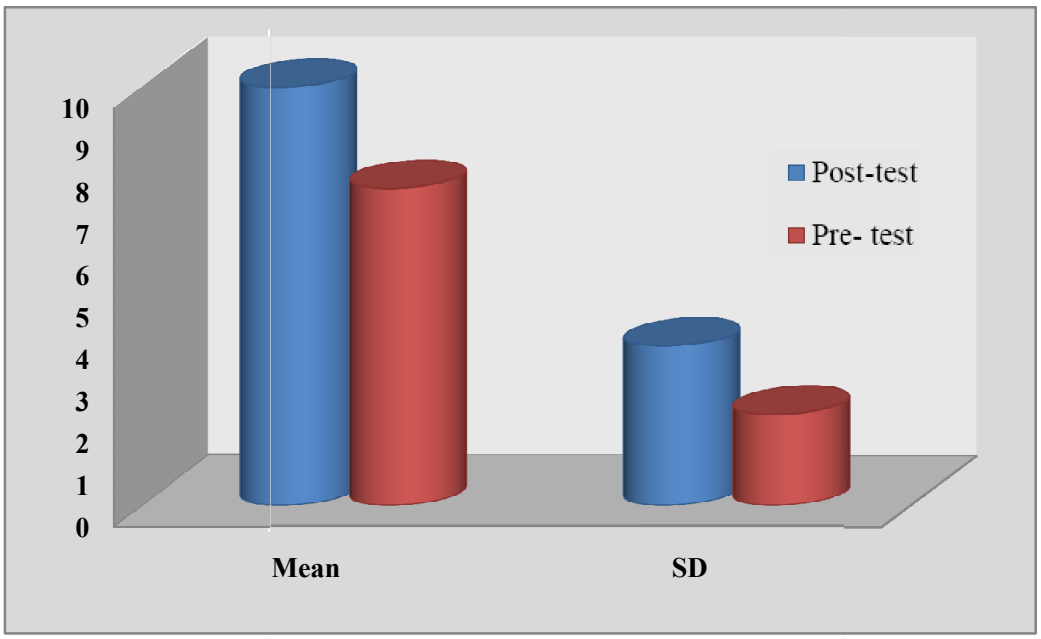


Figure 21. Mean and standard deviation of pretest and posttest score on achievement in social science of control group

After the intervention of existing method of teaching to the control group, the mean and standard deviation based on the various objectives of achievement test of the control group was found out by conducting the same achievement test carried out before the intervention. The pretest and posttest scores of control group were compared by finding its value using paired t-test and tested it for significance. The results of test of significance of the difference between mean pretest and posttest scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of control group are given in table 17.

Table 17

Comparison of Mean Pretest and Posttest Scores of Achievement in Social Science of Control Group-with Regards to Objectives of Achievement in Social Science (N= 34)

Variable	Test	Mean	Std. Deviation	r	t-value	Level of significance
Remembering	Post-test	2.70	1.26	.53	3.37	0.01
	Pre test	2.00	1.25			
Understanding	Post-test	3.70	2.11	.49	4.04	0.01
	Pre test	2.41	1.35			
Applying	Post-test	1.88	1.41	.49	1.51	NS
	Pre test	1.56	.959			
Analyzing	Post-test	1.68	.842	.36	.517	NS
	Pre test	1.59	.924			

NS- Not significant

Table 17 shows that the critical ratio of the mean score on remembering is 3.37 and coefficient of correlation is 0.53 for the control group. The t-value is greater than the tabled value (2.58) at 0.01 level of significance. Hence the mean score on remembering is significantly higher in posttest than in pretest for the students not using the Instructional Strategy based on Individualized Support Plan.

From table 17 it is clear that the critical ratio of the mean score on understanding is 4.04 and coefficient of correlation is 0.49 for the control group. The t-value is greater than the tabled value (2.58) at 0.01 level of significance. Hence the mean score on understanding is significantly higher in posttest than in pretest for the students not using the Instructional Strategy based on Individualized Support Plan.

The critical ratio obtained for the mean scores in the case of applying is 1.51 and coefficient of correlation is 0.49. The t-value is lower than the tabled value (1.96) at .05 level of significance. It indicates that the mean score on applying in posttest is not significantly higher than that in pretest even at .05 level for the

control group. Hence for students not using the Instructional Strategy based on Individualized Support Plan, mean score on applying in the posttest is not higher than that in pretest.

The critical ratio obtained for the mean scores in the case of analyzing is 0.517 and coefficient of correlation is 0.36. The t-value is lower than the tabled value (1.96) at .05 level of significance. It indicates that the mean score on analyzing in posttest is not significantly higher than that in pretest even at .05 level for the control group. Hence for students not using the Instructional Strategy based on Individualized Support Plan, mean score on analyzing in the posttest is not higher than that in pretest.

Graphical representation of mean pretest and posttest scores of control group with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing are presented in figure 22. And to get a better view on the level achievement in social science and with regards to learning objectives of the control group, smoothed cumulative percentage frequency curves are drawn and are presented as figure 23.

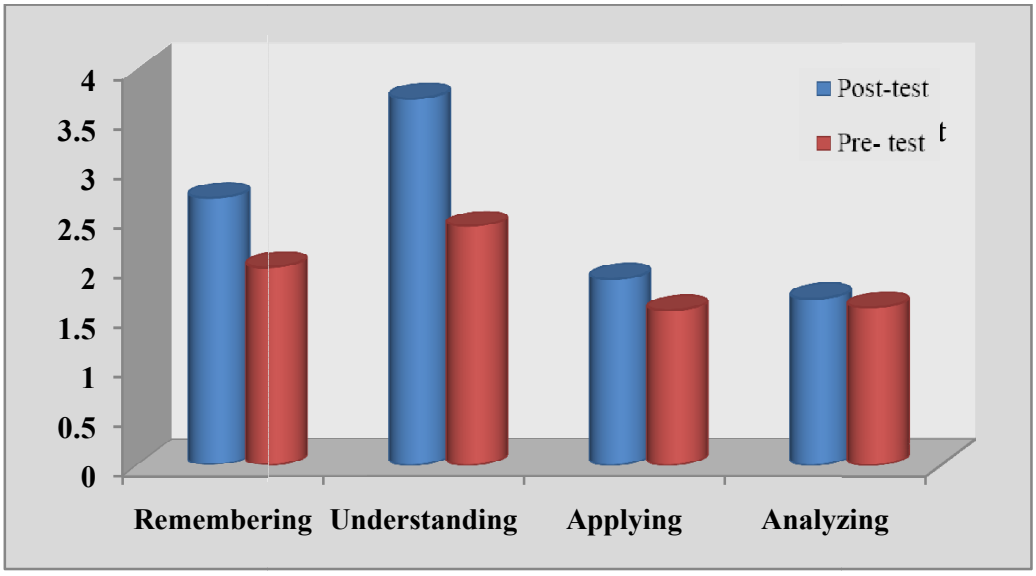


Figure 22. mean pretest and posttest score comparison with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of control groups

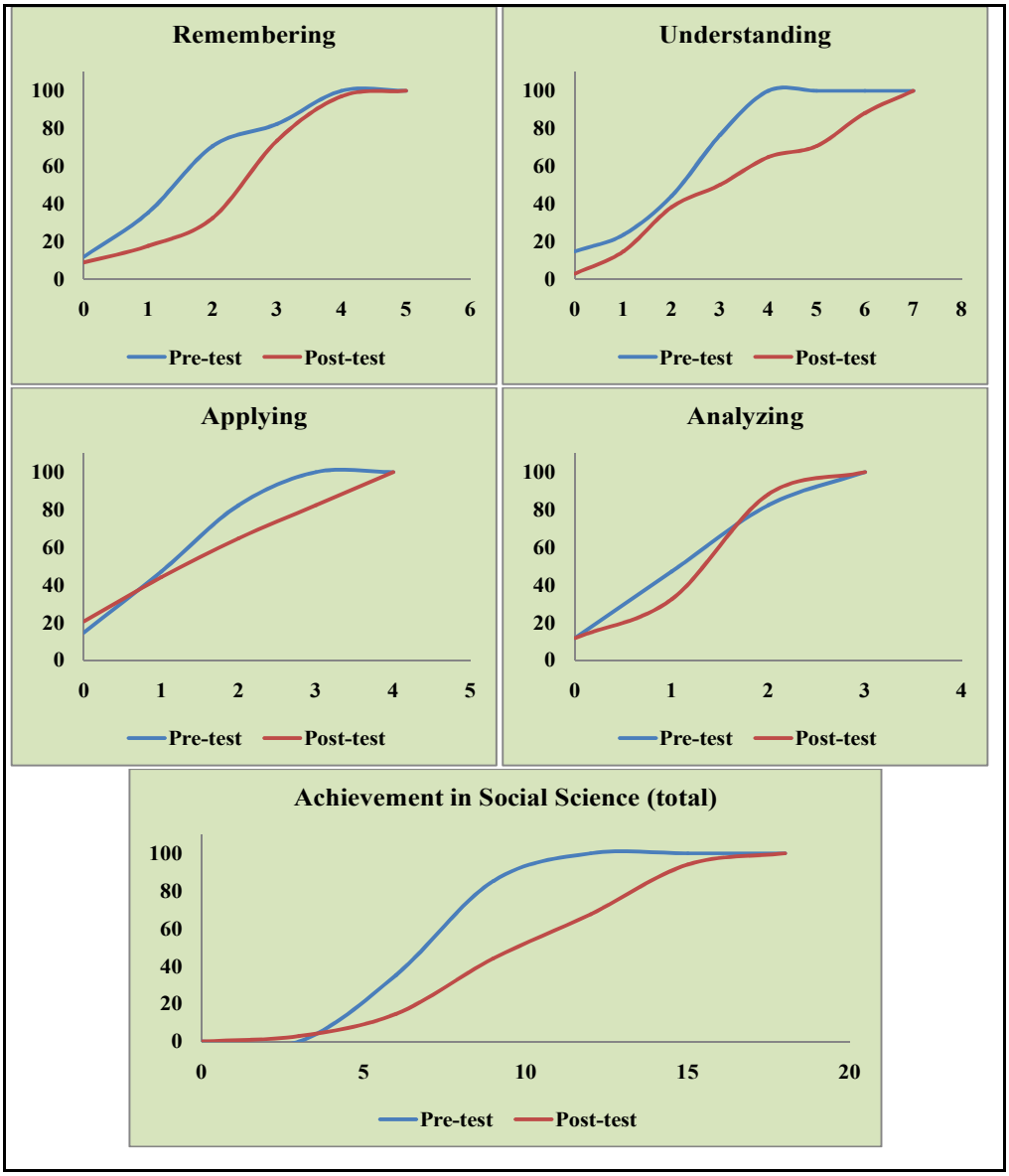


Figure 23. Smoothed cumulative percentage frequency curves of comparison of pretest and posttest scores of 'achievement in social science total and with regards to objectives of achievement in social science' of control groups.

Comparison of mean gain scores on achievement in Social Science and with regards to objectives of achievement in social science of experimental and control group

The mean and standard deviation of the gain scores of experimental and control groups were found out and subjected to the test of significance of difference between means of large independent samples.

The data and result of comparison of mean gain score of experimental and control groups are presented in table 18.

Table 18

Comparison of Mean Gain Score of Achievement in Social Science between Experimental and Control Groups

Variable	Group	N	Mean	Std. Deviation	t-value	Level of significance
Achievement in Social Science	Experimental group	30	15.07	2.65	17.75	0.01
	Control group	34	2.41	3.00		

Table 18 shows that the t-vale obtained for the gain scores between experimental and control group is 17.75 which is significant at 0.01 level. This suggests that there is significant difference in the mean gain score of the experimental and control group on achievement in social science.

It can be inferred from the result of the t-test that the performance of the experimental and control group was dissimilar. High mean gain score for the experimental group over the control group was noticed. This reveals the superiority of the instructional strategy based on Individualized Support Plan over the Existing Method of teaching on achievement in social science.

Bar diagrams for Comparison of mean gain scores and standard deviation of achievement in social science of experimental group and control group are presented in figure 24.

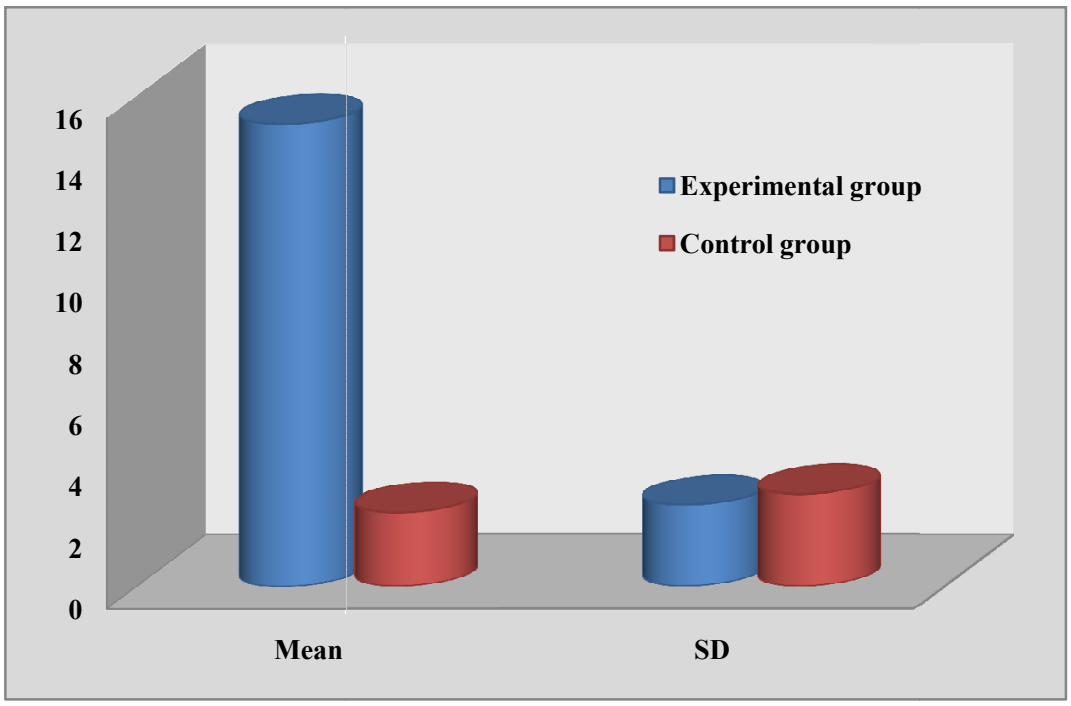


Figure 24. Mean and standard deviation of gain score in achievement in social science of experimental group and control group

To test the effect of Instructional Strategy based on Individualized Support Plan on achievement in social science with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among intellectually challenged secondary school students, test of significance of difference between mean gain scores on each learning objective was done. Results of the mean comparison is presented in table 19.

Table 19

Comparison of Mean Gain Score of Achievement in Social science between Experimental and Control Groups - with Regards to Objectives of Achievement in Social Science

Variable	Group	N	Mean	Std. Deviation	t-value	Level of significance
Remembering	Experimental group	30	3.40	1.00	9.57	0.01
	Control group	34	.70	1.22		
Understanding	Experimental group	30	3.70	1.70	5.36	0.01
	Control group	34	1.29	1.87		
Applying	Experimental group	30	3.43	.935	11.15	0.01
	Control group	34	.323	1.25		
Analyzing	Experimental group	30	4.53	1.16	16.44	0.01
	Control group	34	.088	.996		

Table 19 shows that, there is a significant difference between the mean gain scores of learning objective Remembering of the Experimental group (M= 3.4, SD = 1.00) and Control group (M=.70, SD = 1.22) [t = 9.57; p <.01]. Mean gain score of the experimental group is higher than that of control group. Hence the Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective remembering.

Table 19 revealed that, there is a significant difference between the mean gain scores of learning objective Understanding of the Experimental group (M= 3.7, SD = 1.7) and Control group (M=1.29, SD = 1.87) [t =5.36; p <.01]. Mean gain score of the experimental group is higher than that of control group. Hence

Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective understanding.

Table 19 shows that, there is a significant difference between the mean gain scores of learning objective Applying of the Experimental group (M= 3.43, SD = 0.935) and Control group (M=0.323, SD = 1.25) [t = 11.15; p <.01]. Mean gain score of the experimental group is higher than that of control group. Hence Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective Applying.

Table 19 revealed that, after intervention, there is a significant difference between the mean gain scores of learning objective Analyzing of the Experimental group (M= 4.53, SD = 1.16) and Control group (M=0.088, SD = 0.996) [t = 16.44; p <.01]. Mean gain score of the experimental group is higher than that of control group. Hence Instructional Strategy based on Individualized Support Plan has significant effect on achievement in learning objective analyzing.

Graphical representation of mean gain scores of experimental and control group with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing are presented in figure 25.

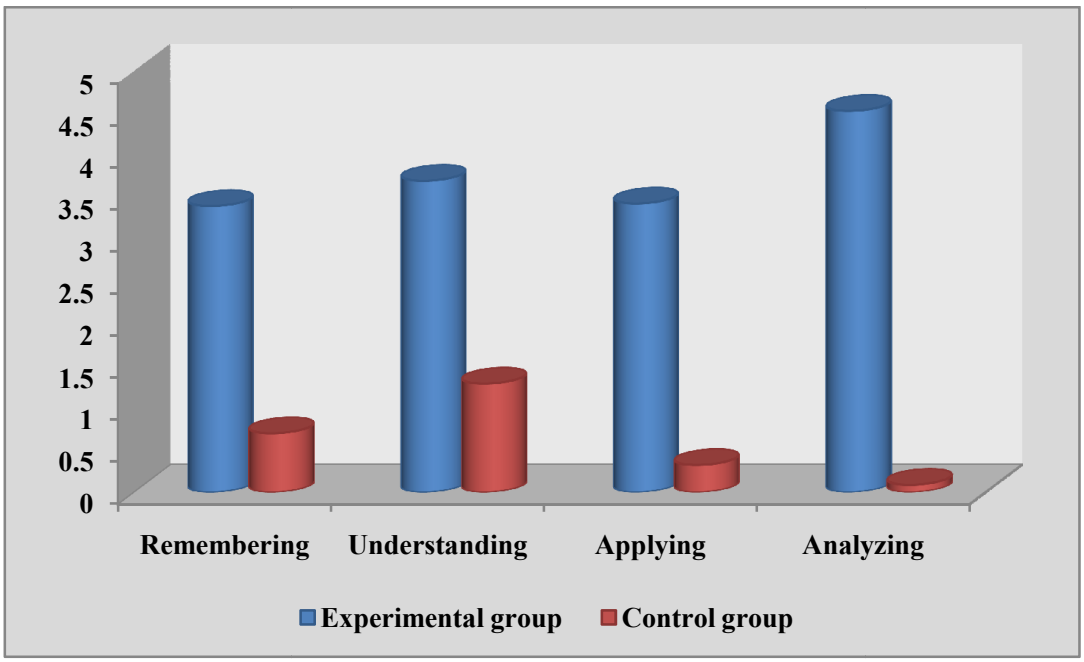


Figure 25. Mean gain score comparison with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing between experimental and control groups

Comparison of Mean Gain Scores on Achievement in Social Science and with Regards to Objectives of Achievement in Social Science of Experimental and Control Group with Pretest Score as Covariates

To compare the effectiveness of Instructional Strategy based on Individualized Support Plan and Existing Method of teaching social science on enhancing achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding , Applying and Analyzing, investigator conducted ANCOVA with initial level of achievement in social science (pretest) as covariate. ANCOVA helps to the investigator to assess the effect of the independent variable on the dependent variable more accurately by explaining the unexplained variance in terms of covariate.

The details of the ANCOVA conducted for total gain score of achievement in social science is given as table 20.

Table 20

Summary of ANOVA of Gain Score on Achievement in Social Science by Group

Source	Sum of Squares	df	Mean Square	F
Corrected Model	2552.34	1	2552.34	315.16
Intercept	4868.84	1	4868.84	601.21
Group	2552.34	1	2552.34	315.16
Error	502.10	62	8.10	
Total	7510.00	64		
Corrected Total	3054.44	63		

Table 20 shows that the total variance explained by the model is 3054.44 when initial level of achievement was not included. The variance explained by the experimental manipulation is 2552.34. The F value obtained is 315.16 which is greater than the tabled value of F (1,63) for significance at 0.01 level (4.00) and hence the experiment has effect on the gain score on achievement in social science. That is the Instructional Strategy based on Individualized Support Plan has bought change in the gain achievement in social science score of intellectually challenged secondary school students.

Table 21

Summary of ANCOVA of Gain Score on Achievement in Social Science by Groups with Pretest Score of Achievement Social Science as Covariate

Source	Sum of Squares	df	Mean Square	F
Corrected Model	2573.01	2	1286.51	163.01
Intercept	474.74	1	474.74	60.15
Pretest score	20.68	1	20.68	2.62
group	2536.34	1	2536.34	321.37
Error	481.42	61	7.89	
Total	7510.00	64		
Corrected Total	3054.44	63		

Table 21 shows that initial level of achievement in social science is not a significant predictor of the gain score of achievement in social science (F=2.62). When the pretest score is included as covariate, the total sum of squares remained the same as 3054.44 units, but the variance explained by the experiment has decreased to 2536.34 units whilst it was 2552.34 units when pretest score was not controlled. That is, when the influence of pretest score on achievement in social science was removed, the variance explained by the experiment is 2552.34 units. The unexplained variance has been reduced to 481.42 from 502.1. Hence experiment has significant effect on gain score on achievement in social science.

Comparison of Estimated Marginal Means

The univariate analysis of covariance revealed a convincing difference between the two groups concerning the achievement in social science. In order to find the group which shows better performance, comparison of estimated marginal mean have done.

Table 22

Data and Results of Comparison of Estimated Marginal Mean of Experimental and Control Groups

Dependent Variable	Estimated Marginal Mean	
	Control group	Experimental group
Gains Score of Achievement in Social Science	2.30	15.19

Comparison of estimated marginal means in table revealed that the experimental group (M = 15.19) shows better performance than the control group (M= 2.30) concerning achievement in social science. Otherwise it can be

stated that the treatment with Individualized Support Plan can improve the achievement in social science better than the existing method of teaching. Again the superiority of Instructional Strategy based on Individualized Support Plan over the present method of teaching social science for enhancing the Achievement in social science is clear from the figure 26.

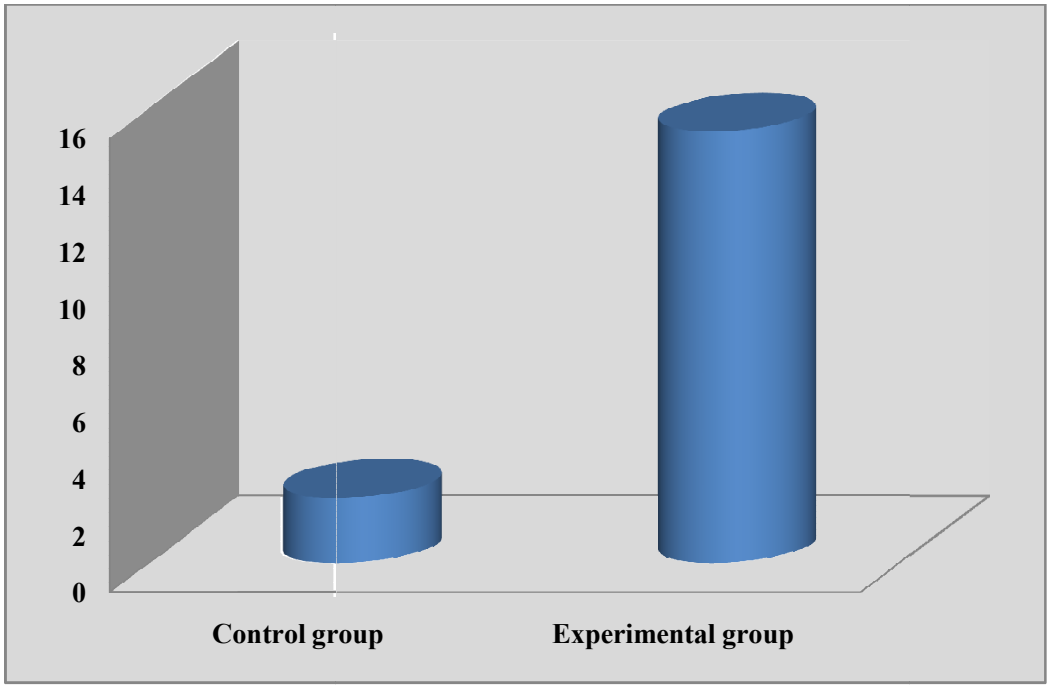


Figure 26. Adjusted mean gain score in achievement in social science of Experimental and Control Groups

To compare the effectiveness of Instructional Strategy based on Individualized Support Plan and existing method of teaching social science on enhancing achievement in social science based on its objectives, the gain scores of experimental and control group on achievement in social science (objective wise) were found out using ANCOVA.

Table 23

Summary of ANCOVA of Gain Score on Remembering by Groups with Pretest Score of Remembering as Covariate

Source	Sum of Squares	df	Mean Square	F
Corrected Model	141.41	2	70.70	82.10
Intercept	136.18	1	136.18	158.14
Pretest score	25.73	1	25.73	29.88
group	132.50	1	132.50	153.87
Error	52.53	61	.861	
Total	442.00	64		
Corrected Total	193.94	63		

Table 23 shows that initial level of achievement in social science is a significant predictor of the gain score of achievement in social science (F=29.8). After performing ANCOVA and the results signifies that, after adjusting for pretest scores, there is statistically significant difference between the experimental and control groups in their achievement in social science based on the objective Remembering, F (1,63) = 153.87, p <0.01. Hence experiment has significant effect on gain score on achievement in social science.

Table 24

Data and Results of Comparison of Estimated Marginal Mean of Remembering of Experimental and Control Groups

Dependent Variable	Estimated marginal mean	
	Control group	Experimental group
Gains score of remembering	.593	3.53

Both the observed and adjusted means show that students taught through the Instructional Strategy based on Individualized Support Plan achieved better when compared to the students taught through the present method of teaching social science. It implied that Individualized Support Plan is better than the

present method of teaching social science for enhancing achievement in social science based on the objective Remembering among intellectually challenged secondary school students. Again the superiority of Instructional Strategy based on Individualized Support Plan over the existing method of teaching social science for enhancing the achievement in social science based on the objective Remembering is clear from the figure 27.

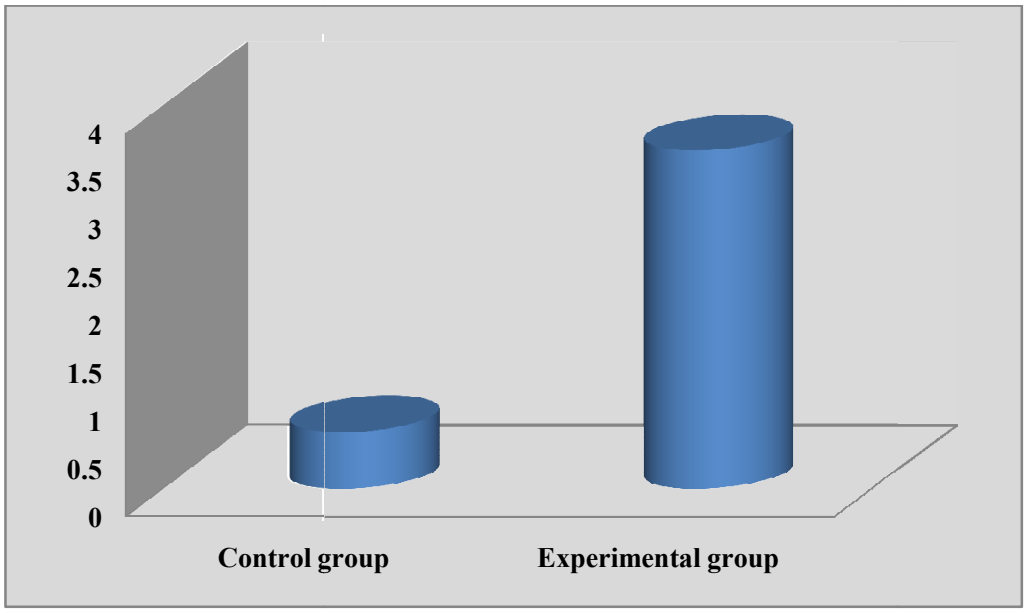


Figure 27. Adjusted mean gain score in remembering of Experimental and Control Groups

Table 25

Summary of ANCOVA of Gain Score on Understanding by Groups with Pretest Score of Understanding as Covariate

Source	Sum of Squares	df	Mean Square	F
Corrected Model	107.57	2	53.79	17.83
Intercept	124.74	1	124.74	41.35
Pretest score	15.32	1	15.32	5.08
group	106.69	1	106.69	35.36
Error	184.03	61	3.02	
Total	667.00	64		
Corrected Total	291.61	63		

Table 25 shows that initial level of achievement in social science is a significant predictor of the gain score of achievement in social science (F=5.08). After performing ANCOVA and the results signifies that, after adjusting for pretest scores, there is statistically significant difference between the experimental and control groups in their achievement in social science based on the objective Understanding, F (1,63) = 35.36, p <0.01. Hence experiment has significant effect on gain score on achievement in social science.

Table 26

Data and Results of Comparison of Estimated Marginal Mean of Understanding of Experimental and Control Groups

Dependent Variable	Estimated marginal mean	
	Control group	Experimental group
Gains score of Understanding	1.15	3.86

Both the observed and adjusted means show that students taught through the Instructional Strategy based on Individualized Support Plan achieved better when compared to the students taught through the present method of teaching social science. It implied that Instructional Strategy based on Individualized Support Plan is better than the present method of teaching social science for enhancing achievement in social science based on the objective understanding among intellectually challenged secondary school students. Again the superiority of Instructional Strategy based on Individualized Support Plan over the existing method of teaching social science for enhancing the achievement in social science based on the objective understanding is clear from the figure 28.

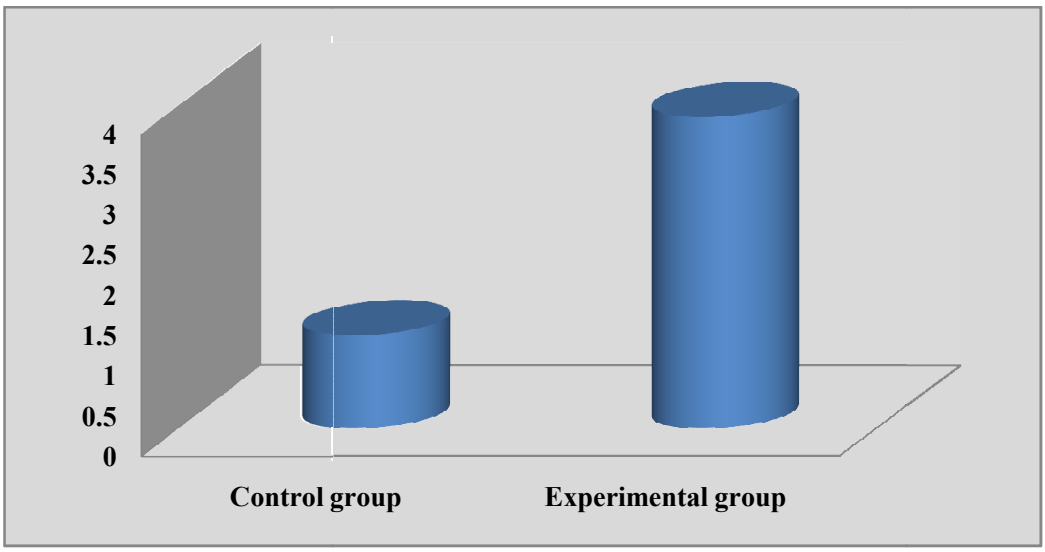


Figure 28. Adjusted mean gain score in understanding of Experimental and Control Groups

Table 27

Summary of ANCOVA of Gain Score on Applying by Groups with Pretest Score of Applying as Covariate

Source	Sum of Squares	df	Mean Square	F
Corrected Model	166.08	2	83.04	78.11
Intercept	109.09	1	109.09	102.62
Pretest score	11.95	1	11.96	11.25
group	144.89	1	144.89	136.29
Error	64.85	61	1.06	
Total	434.00	64		
Corrected Total	230.94	63		

Table 27 shows that initial level of achievement in social science is a significant predictor of the gain score of achievement in social science (F=11.25). After performing ANCOVA and the results signifies that, after adjusting for pretest scores, there is statistically significant difference between the experimental and control groups in their achievement in social science based on the objective applying, F (1,63) = 136.29, p <0.01. Hence experiment has significant effect on gain score on achievement in social science.

Table 28

Data and Results of Comparison of Estimated Marginal Mean of Applying of Experimental and Control Groups

Dependent Variable	Estimated marginal mean	
	Control group	Experimental group
Gains score of applying	0.36	3.39

Both the observed and adjusted means show that students taught through the Instructional Strategy based on Individualized Support Plan achieved better when compared to the students taught through the existing method of teaching social science. It implied that Instructional Strategy based on Individualized Support Plan is better than the existing method of teaching social science for enhancing achievement in social science based on the objective applying among intellectually challenged secondary school students. Again the superiority of Instructional Strategy based on Individualized Support Plan over the existing method of teaching social science for enhancing the achievement in social science based on the objective applying is clear from the Figure 29.

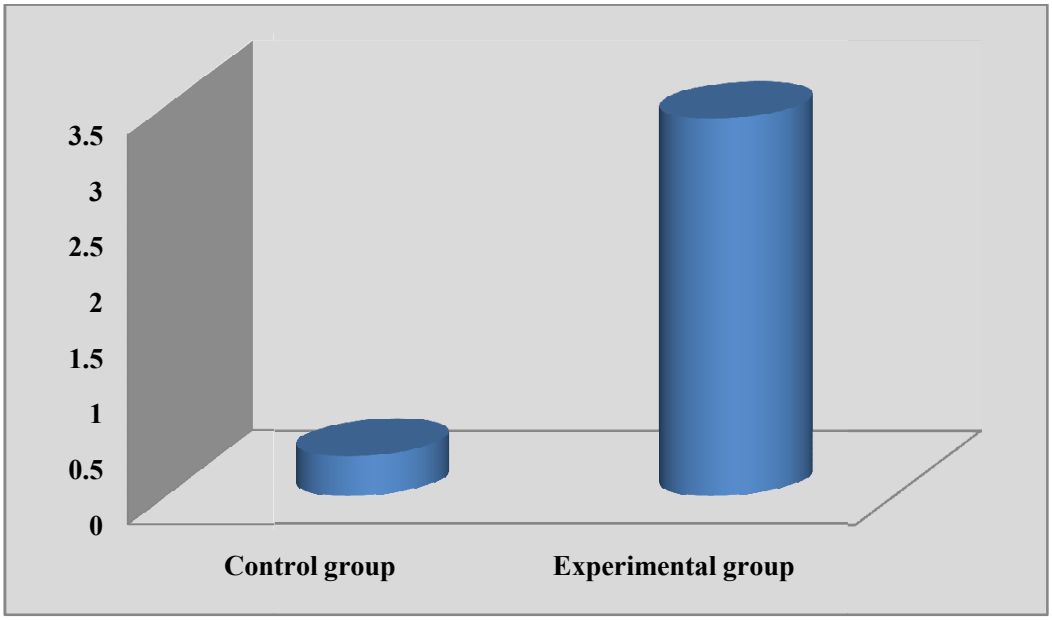


Figure 29. Adjusted mean gain score in applying of Experimental and Control Groups

Table 29

Summary of ANCOVA of Gain Score on Analyzing by Groups with Pretest Score of Analyzing as Covariate

Source	Sum of Squares	df	Mean Square	F
Corrected Model	342.83	2	171.42	236.17
Intercept	170.07	1	170.07	234.32
Pretest score	27.93	1	27.93	38.48
group	308.04	1	308.04	424.41
Error	44.27	61	.726	
Total	689.00	64		
Corrected Total	387.11	63		

Table 29 shows that initial level of achievement in social science is a significant predictor of the gain score of achievement in social science (F=38.48). After performing ANCOVA and the results signifies that, after adjusting for pretest scores, there is statistically significant difference between the experimental and control groups in their achievement in social science based on the objective analyzing, F (1,63) = 424.41, p <0.01. Hence experiment has significant effect on gain score on achievement in social science.

Table 30

Data and Results of Comparison of Estimated Marginal Mean of Analyzing of Experimental and Control Groups

Dependent Variable	Estimated marginal mean	
	Control group	Experimental group
Gains score of analyzing	0.11	4.51

Both the observed and adjusted means show that students taught through the Instructional Strategy based on Individualized Support Plan achieved better when compared to the students taught through the present method of teaching

social science. It implied that Instructional Strategy based on Individualized Support Plan is better than the existing method of teaching social science for enhancing achievement in social science based on the objective analyzing among intellectually challenged secondary school students. Again the superiority of Instructional Strategy based on Individualized Support Plan over the existing method of teaching social science for enhancing the achievement in social science based on the objective analyzing is clear from the figure 30.

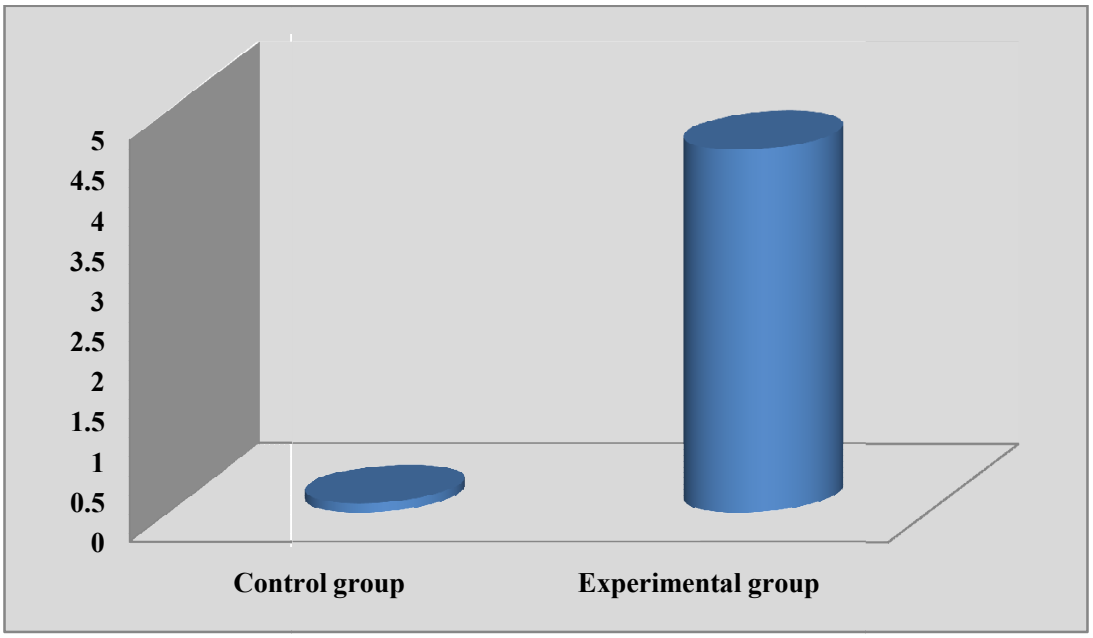


Figure 30. Adjusted mean gain score in analyzing of Experimental and Control Groups

Effect size of the Developed Instructional Strategy based on Individualized Support Plan on Achievement in Social Science and Objective of Achievement-Remembering, Understanding, Applying and Analyzing

The Effect size of the Instructional Strategy based on Individualized Support Plan on achievement in social science and objective of achievement-remembering, understanding, applying and analyzing of the experimental group was calculated. The details of the effect size calculation are presented in table 31.

Table 31

Data and Result on the Effect Size of the Individualized Support Plan on Achievement in Social and Objectives of Achievement in Social Science of the Experimental Group(N=30)

Variable	Test	Mean	Std. Deviation	Coefficient of correlation	Cohen's d	r -Value
Achievement in Social Science	Post-test	23.50	2.25	.226	5.68	.943
	Pre test	8.43	1.99			
Remembering	Post-test	5.80	.610	.028	3.39	.861
	Pre test	2.40	.813			
Understanding	Post-test	6.80	1.47	-.011	2.17	.735
	Pre test	3.10	.845			
Applying	Post-test	4.83	.592	.000	3.67	.878
	Pre test	1.40	.724			
Analyzing	Post-test	6.06	.868	-.194	3.89	.889
	Pre test	1.53	.629			

From table 31, the Cohen's d obtained on the mean score of achievement in social science is 5.68 with effect size .943 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing achievement in social science among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement-remembering is 3.39 with effect size .861 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of achievement- remembering among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement- understanding is 2.17 with effect size .735 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of achievement- understanding among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement- Applying is 3.67 with effect size .878 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of achievement- Applying among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement- Analyzing is 3.89 with effect size .889 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of achievement- Analyzing among intellectually challenged secondary school students.

The effect size of the Instructional Strategy based on Individualized Support Plan on achievement in social science and objective of achievement- remembering, understanding, applying and analyzing in posttest of both experimental and control group was calculated. The details of the effect size calculation are given in table 32.

Table 32

Data and Result on the Effect Size of Instructional Strategy Based on Individualized Support Plan for Experimental and Control Group on Posttest Mean Scores on Achievement in Social and Objectives of Achievement in Social Science

Variable	Group	N	Mean	Std. Deviation	Cohens' *d*	r
Achievement in Social Science	Experimental group	30	23.50	2.25	4.27	.907
	Control group	34	9.97	3.79		
Remembering	Experimental group	30	5.80	.610	3.04	.839
	Control group	34	2.70	1.26		
Understanding	Experimental group	30	6.80	1.47	1.68	.648
	Control group	34	3.70	2.11		
Applying	Experimental group	30	4.83	.592	2.67	.804
	Control group	34	1.88	1.41		
Analyzing	Experimental group	30	6.06	.868	5.14	.934
	Control group	34	1.67	.843		

From table 32, the Cohen's d obtained on the mean score of achievement in social science is 4.27 with effect size .907 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing achievement in social science among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement-remembering is 3.04 with effect size .839 which is greater than the value needed for very large effect($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of

achievement- remembering among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement-understanding is 1.68 with effect size .648 which is greater than the value needed for large effect($r \geq .5$). Hence the Instructional Strategy based on Individualized Support Plan has large effect in enhancing objective of achievement-understanding among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement-Applying is 2.67 with effect size .804 which is greater than the value needed for very large effect ($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of achievement-Applying among intellectually challenged secondary school students.

The Cohen's d obtained on the mean score of objective of achievement-Analyzing is 5.14 with effect size .934 which is greater than the value needed for very large effect ($r \geq .7$). Hence the Instructional Strategy based on Individualized Support Plan has very large effect in enhancing objective of achievement-Analyzing among intellectually challenged secondary school students.

Conclusion

The major objective of the study was to find out the effectiveness of Instructional Strategy based on Individualized Support Plan on achievement of social science among intellectually challenged secondary school students. Preliminary analysis of the data showed the normal distribution of the scores. Results of the major analysis of the data can be concluded as follows.

Comparison of Achievement in Social Science between Experimental and Control group before Intervention

Before implementation of Instructional Strategy based on Individualized Support Plan, the experimental and control group were found to be same with respect to Achievement in social science (t= 1.67) and with regards to objectives of achievement in social science namely Remembering (t = 1.49), Applying (t = 0.739) and Analyzing (t = 0.280). The experimental group is found to be higher in their mean score with regards to objective of achievement in social science namely Understanding (t = 2.47).

Comparison of Achievement in Social Science between Experimental and Control group after Intervention

Results of the mean posttest score comparison showed that there is a significant difference in the mean post test score of experimental and control group. The experimental group is found to be higher in their mean score of achievement in social science (t = 17.51) and with regards to objectives of achievement in social science namely Remembering (t = 12.66), Understanding (t = 6.86), Applying (t = 11.14) and Analyzing (t = 20.50).

Comparison of Mean Scores of Pretest and Posttest on Achievement in Social Science and with regards to Objectives of Achievement in Social Science of the Experimental and Control group

Mean pretest- post test comparison of achievement in social science and with regards to objectives of achievement in social science of the experimental group revealed that the posttest score is found to be higher in their mean score of achievement in social science (t=31.12) and with regards to objectives of

achievement in social science namely Remembering (t = 18.56), Understanding (t = 11.89), Applying (t = 20.11) and Analyzing (t = 21.28).

Mean pretest- post test comparison of achievement in social science and with regards to objectives of achievement in social science of the control group revealed that the posttest score is found to be higher in their mean score of achievement in social science (t = 4.68) and with regards to objectives of achievement in social science namely Remembering (t = 3.37), and Understanding (t = 4.04). The mean pretest and posttest score were found to be no significant difference with regards to objectives of achievement in social science namely Applying (t = 1.51) and Analyzing (t = 0.517).

Comparison of Mean Gain Scores on Achievement in Social Science and with Regards to Objectives of Achievement in Social Science of Experimental and Control Group

Results of the mean gain score comparison showed that there exist a significant difference in the mean gain score of experimental and control group. The experimental group is found to be higher in their mean gain score of achievement in social science (t = 17.75) and with regards to objectives of achievement in social science namely Remembering (t=9.57), Understanding (t=5.36), Applying (t=11.15) and Analyzing (t = 16.44).

Comparison of Mean Gain Scores on Achievement in Social Science and with Regards to Objectives of Achievement in Social Science of Experimental and Control Group with Pretest Score as Covariates

Results of the comparison of mean gain scores on achievement in social science and with regards to objectives of achievement in social science of

experimental and control group showed that even after pretest score was statistically controlled; there exist a significant difference in the mean gain score of experimental and control group. The experimental group is found to be higher in their mean gain score of achievement in social science (F = 321.37, df= 1,63) and with regards to objectives of achievement in social science namely Remembering (F= 153.87, df = 1,63), Understanding (F = 35.36, df= 1,63), Applying (F = 136.29, df= 1,63) and Analyzing (F = 424.41, df= 1,63).

Effect size of the Developed Instructional Strategy based on Individualized Support Plan on Achievement in Social Science and Objective of Achievement- Remembering, Understanding, Applying and Analyzing

Effect size of the mean score comparison was find to establish the effectiveness of Instructional Strategy based on Individualized Support Plan on achievement in social science with regards to objectives of achievement in social science. Results of the effect size calculation showed that Instructional Strategy based on Individualized Support Plan has very large effect on achievement in social science (r = 0.943) and with regards to objectives of achievement in social science namely Remembering (r =0.861), Understanding (r =0.735), Applying (r =0.878) and Analyzing (r =0.889).

SUMMARY, CONCLUSIONS AND SUGGESTIONS

- Study in Retrospect
- Major Findings of the Study
- Tenability of Hypotheses
- Conclusion
- Educational Implication
- Suggestions for Further Research

This chapter gives an overview of significant aspects of the stages of conducting the study, the important findings, tenability of hypotheses, their educational implications and suggestions for further research.

Study in Retrospect

The various aspects related to the different stages of the present study like the problem, variables, objectives, hypotheses, and methodology are given in a nutshell.

Restatement of the Problem

Present study is entitled as "EFFECTIVENESS OF INSTRUCTIONAL STRATEGY BASED ON INDIVIDUALIZED SUPPORT PLAN ON ACHIEVEMENT IN SOCIAL SCIENCE OF INTELLECTUALLY CHALLENGED STUDENTS".

Variables for the study

Purpose of the study was to find out the effectiveness of instructional strategy based on individualized support plan on achievement in social science among secondary school students with intellectual disability.

The dependent and independent variables selected for the present study are the following.

Dependent variable

The dependent variable in the present study is

- Achievement in Social Science

Independent variables

The independent variables for the present study are

- Individualized Support Plan and
- Existing method of teaching

Objectives of the Study

The major objectives of the study are to develop an Instructional Strategy based on Individualized Support Plan (ISP) and to test its effectiveness on the Achievement in Social Science among Intellectually Challenged Secondary School Students. To achieve the major objectives of the study investigator framed a set of specific objectives for the study which are following.

1. To find the perception of teachers on problems, challenges and present situation of Intellectually Challenged Secondary School Students.
2. To compare the mean pre-test score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
3. To compare the mean pre-test score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
4. To compare the mean pos-test score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.

5. To compare the mean post-test score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
6. To compare the mean pre-test and post-test scores in achievement in social science of experimental group of Intellectually Challenged Secondary School Students.
7. To compare the mean pre-test and post-test scores of experimental group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
8. To compare the mean pre-test and post-test scores in achievement in social science of control group of Intellectually Challenged Secondary School Students.
9. To compare the mean pre-test and post-test scores of control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.
10. To compare the mean gain score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students.
11. To compare the mean gain score of experimental and control group of Intellectually Challenged Secondary School Students with regards to

objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing.

12. To compare the mean gain score in achievement in social science of experimental and control group of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
13. To compare the mean gain score of experimental and control group of Intellectually Challenged Secondary School Students with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing when pre test score is taken as co-variate.
14. To find out the effect size of the developed Instructional Strategy based on Individualized Support Plan on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

Hypotheses of the Study

1. There is no significant difference in the pretest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
2. There is no significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

3. There is significant difference in the posttest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.
4. There is significant difference in the posttest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.
5. There is significant difference between pretest and posttest mean scores of achievement in social science of the experimental group of Intellectually Challenged Secondary School Students.
6. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the experimental group
7. There is significant difference between pretest and posttest mean scores of achievement in social science of the control group of Intellectually Challenged Secondary School Students.
8. There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the control group
9. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.

10. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.
11. There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
12. There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.
13. The Instructional Strategy based on Individualized Support Plan has a very large effect on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

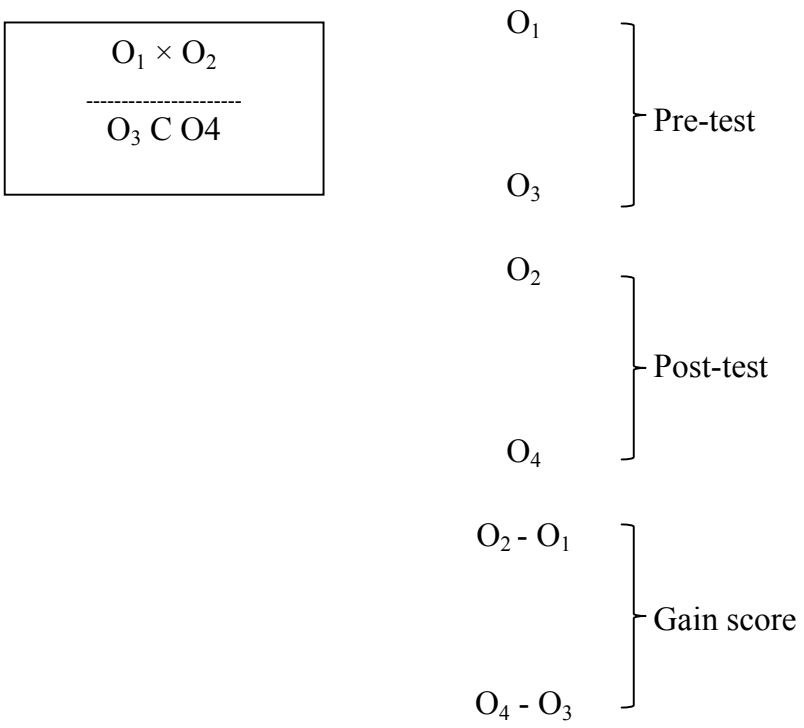
Methodology in Brief

Method used

The present study has been conducted by employing both survey and experimental methods

Design of the study

The Pre-test- Post-test Non-equivalent group design was adopted for the study. The design of the study is illustrated as follows.



X - Exposure of a group to experimental (treatment)

C - Exposure of a group to control condition

O - Observation/test administered

Sample selected for the study

The sample of the study consists of 64 intellectually challenged secondary school students and 154 secondary school teachers. 30 intellectually challenged students comprise Experimental group and 34 intellectually challenged students comprise Control Group. The sample for both Experimental and Control Group were selected from 20 secondary schools of Kozhikode district.

Tools used for the study

The following tools were used for the present study

1. Lesson transcript based on Individualized Support Plan (Ranjithlal & Koya, H.M.P, 2018)
2. Achievement test in social science (Ranjithlal & Koya, H.M.P., 2018)
3. Questionnaire for teachers (Ranjithlal & Koya, H.M.P., 2018)
4. Student Profile (Ranjithlal & Koya, H.M.P., 2018)

Statistical Techniques used

1. Descriptive statistics
2. Test of significance of mean difference for large independent samples
3. One-tailed test of significance of difference between two means for large dependent groups
4. Analysis of Covariance (ANCOVA)
5. Effect Size (Cohen's *d*)

Major Findings of the Study

Following are the major findings of the study.

1. The pretest mean scores on Achievement in social science of experimental and control group do not differ significantly ($t = 1.67$, $p > .05$).
2. The pre-test mean scores with regards to objective of achievement in social science namely Remembering of experimental and control group do not differ significantly ($t = 1.49$, $p > .05$).
3. The pretest mean scores with regards to objective of achievement in social science namely Understanding of experimental and control group differ significantly, the higher score for experimental group ($t = 2.47$, $p < .05$).

4. The pretest mean scores with regards to objective of achievement in social science namely Applying of experimental and control group do not differ significantly ($t = .739$, $p > .05$).
5. The pretest mean scores with regards to objective of achievement in social science namely Analyzing of experimental and control group do not differ significantly ($t = 0.280$, $p > .05$).
6. The posttest mean scores on Achievement in social science of experimental and control group differ significantly, mean scores is significantly higher for the experimental group than the control group ($t = 17.51$, $p < .01$).
7. The posttest mean scores with regards to objective of achievement in social science namely Remembering of experimental and control group differ significantly, mean scores is significantly higher for the experimental group than the control group ($t = 12.66$, $p < .01$).
8. The posttest mean scores with regards to objective of achievement in social science namely Understanding of experimental and control group differ significantly, mean scores is significantly higher for the experimental group than the control group ($t = 6.86$, $p< .01$).
9. The posttest mean scores with regards to objective of achievement in social science namely Applying of experimental and control group differ significantly, mean scores is significantly higher for the experimental group than the control group ($t = 11.14$, $p < .01$).
10. The posttest mean scores with regards to objective of achievement in social science namely Analyzing of experimental and control group differ significantly, mean scores is significantly higher for the experimental group than the control group ($t = 20.50$, $p < .01$).

11. The mean posttest score on achievement in social science is significantly higher than the pretest score in the experimental group ($t = 31.12$, $p < .01$)
12. The mean posttest score with regards to objective of achievement in social science namely Remembering is significantly higher than the pretest score in the experimental group ($t = 18.56$, $p < .01$).
13. The mean posttest score with regards to objective of achievement in social science namely Understanding is significantly higher than the pretest score in the experimental group ($t = 11.89$, $p < .01$).
14. The mean posttest score with regards to objective of achievement in social science namely Applying is significantly higher than the pretest score in the experimental group ($t = 20.11$, $p < .01$).
15. The mean posttest score with regards to objective of achievement in social science namely Analyzing is significantly higher than the pretest score in the experimental group ($t = 21.28$, $p < .01$).
16. The mean posttest score on achievement in social science is significantly higher than the pretest score in the control group ($t = 4.68$, $p < .01$)
17. The mean posttest score with regards to objective of achievement in social science namely Remembering is significantly higher than the pretest score in the control group ($t = 3.37$, $p < .01$).
18. The mean posttest score with regards to objective of achievement in social science namely Understanding is significantly higher than the pretest score in the control group ($t = 4.04$, $p < .01$).
19. The mean posttest score with regards to objective of achievement in social science namely Applying is not significantly differ with the pretest score in the control group ($t = 1.51$, $p>.05$).

20. The mean posttest score with regards to objective of achievement in social science namely Analyzing is not significantly differ with the pretest score in the control group ($t = 0.517$, $p>.05$).

21. The mean gain score on achievement in social science is significantly higher for the experimental group than the control group ($t = 17.75$, $p < .01$).

22. The mean gain score with regards to objective of achievement in social science namely Remembering is significantly higher for the experimental group than the control group ($t = 9.57$, $p < .01$).

23. The mean gain score with regards to objective of achievement in social science namely Understanding is significantly higher for the experimental group than the control group ($t = 5.36$, $p < .01$).

24. The mean gain score with regards to objective of achievement in social science namely Applying is significantly higher for the experimental group than the control group ($t = 11.15$, $p < .01$).

25. The mean gain score with regards to objective of achievement in social science namely Analyzing is significantly higher for the experimental group than the control group ($t = 16.44$, $p < .01$).

26. The experimental manipulation using "Instructional Strategy based on Individualized Support Plan" has significant effect on the gain scores on achievement in social science of the intellectually challenged secondary school students when initial level of achievement was controlled ($F= 321.37$, $p< .01$, $df(1,63)$).

27. The experimental manipulation using "Instructional Strategy based on Individualized Support Plan" has significant effect on the gain scores with regards to objective of achievement in social science namely Remembering of the intellectually challenged secondary school students when initial level of achievement was controlled ($F = 153.87$, $p < .01$, $df(1,63)$).
28. The experimental manipulation using "Instructional Strategy based on Individualized Support Plan" has significant effect on the gain scores with regards to objective of achievement in social science namely Understanding of the intellectually challenged secondary school students when initial level of achievement was controlled ($F = 35.36$, $p < .01$, $df(1,63)$).
29. The experimental manipulation using "Instructional Strategy based on Individualized Support Plan" has significant effect on the gain scores with regards to objective of achievement in social science namely Applying of the intellectually challenged secondary school students when initial level of achievement was controlled ($F = 136.29$, $p < .01$, $df(1,63)$).
30. The experimental manipulation using "Instructional Strategy based on Individualized Support Plan" has significant effect on the gain scores with regards to objective of achievement in social science namely Analyzing of the intellectually challenged secondary school students when initial level of achievement was controlled ($F = 424.41$, $p < .01$, $df(1,63)$).
31. Effect size of the 'Instructional Strategy based on Individualized Support Plan on mean post test score on achievement in social science is very large for the experimental group ($d = 5.68$, $r = .943$).
32. Effect size of the 'Instructional Strategy based on Individualized Support Plan on mean post test score with regards to objective of achievement in social science namely Remembering is very large for the experimental group ($d = 3.39$, $r = .861$).

33. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean post test score with regards to objective of achievement in social science namely Understanding is very large for the experimental group (d = 2.17, r = .735).
34. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean post test score with regards to objective of achievement in social science namely Applying is very large for the experimental group (d = 3.67, r = .878).
35. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean post test score with regards to objective of achievement in social science namely Analyzing is very large for the experimental group (d = 3.89, r = .889).
36. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean gain score on achievement in social science is very large (d = 4.27, r = .907).
37. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean gain score with regards to objective of achievement in social science namely Remembering is very large (d = 3.04, r = .839).
38. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean gain score with regards to objective of achievement in social science namely Understanding is large (d = 1.68, r = .648).
39. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean gain score with regards to objective of achievement in social science namely Applying is very large (d = 2.67, r = .804).

40. Effect size of the 'Instructional Strategy based on Individualized Support Plan' on mean gain score with regards to objective of achievement in social science namely Analyzing is very large (d = 5.14, r = .934).

Tenability of Hypotheses

Based on the findings of the study, the tenability of the hypotheses was tested.

Hypothesis 1.

There is no significant difference in the pretest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.

Findings 1 revealed that there is no significant difference in mean pretest scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted.**

Hypothesis 2.

There is no significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

Findings 2,4 and 5 showed that there is no significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Applying and

Analyzing of Intellectually Challenged Secondary School Students. Finding 3 revealed that that there exists a significant difference in the pretest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Understanding. **Hence the hypothesis is partially substantiated**. It is accepted for Remembering, Applying and Analyzing, and not for Understanding.

Hypothesis 3.

> **There is significant difference in the posttest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.**

Finding 6 indicated that there is significant difference in the posttest mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted.**

Hypothesis 4.

> **There is significant difference in the posttest mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students**.

Findings 7, 8, 9 and 10 revealed that There is significant difference in the posttest mean scores between experimental and control groups with regards to

objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted.**

Hypothesis 5.

> **There is significant difference between pretest and posttest mean scores of achievement in social science of the experimental group of Intellectually Challenged Secondary School Students.**

Finding 11 showed that there is significant difference between pretest and posttest mean scores of achievement in social science of the experimental group of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted.**

Hypothesis 6.

> **There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the experimental group**.

Finding 12, 13, 14 and 15 revealed that there is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the experimental group. **Hence the hypothesis is accepted.**

Hypothesis 7.

There is significant difference between pretest and posttest mean scores of achievement in social science of the control group of Intellectually Challenged Secondary School Students.

Finding 16 revealed that there is significant difference between pretest and posttest mean scores of achievement in social science of the control group of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted.**

Hypothesis 8.

There is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students of the control group.

From findings 17 and 18 it is clear that there is significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Remembering and Understanding of Intellectually Challenged Secondary School Students of the control group. Findings 19 and 20 revealed that there is no significant difference between pretest and posttest mean scores with regards to objectives of achievement in social science namely Applying and Analyzing of Intellectually Challenged Secondary School Students of the control group. **Hence the hypothesis is partially accepted.** It is accepted for Remembering and Understanding, and not for Applying and Analyzing.

Hypothesis 9.

There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students.

Finding 21 showed that there is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted.**

Hypothesis 10.

There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students.

Findings 22, 23, 24 and 25 revealed that there is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted**

Hypothesis 11.

There is significant difference in the gain mean scores of achievement in social science between experimental and control groups of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.

From finding 26 it is clear that there is significant difference in the gain mean scores of achievement in social science between experimental and control

groups of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate. **Hence the hypothesis is accepted**

Hypothesis 12.

There is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate.

Findings 27, 28, 29 and 30 revealed that there is significant difference in the gain mean scores between experimental and control groups with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing of Intellectually Challenged Secondary School Students when pre test score is taken as co-variate. **Hence the hypothesis is accepted**.

Hypothesis 13.

The Instructional Strategy based on Individualized Support Plan has a very large effect on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students.

Findings 31, 32, 33, 34 and 35 revealed that the Instructional Strategy based on Individualized Support Plan has a very large effect on achievement in social science and with regards to objectives of achievement in social science namely Remembering, Understanding, Applying and Analyzing among Intellectually Challenged Secondary School Students. **Hence the hypothesis is accepted**.

Conclusion

Instructional Strategy based on Individualized Support Plan is an important document and tool to train the intellectually challenged students. In the present study it has been observed that it is meaningful to use the Instructional Strategy based on ISP in the inclusive setting. There were two groups in the study. To study the effect of Instructional Strategy based on ISP the experimental group was given learning experiences with ISP while the control group was dealt with the existing method. Significant difference was in the mean scores of Remembering, Understanding, Applying and Analyzing skills of experimental & Control group among intellectually challenged students after the completion of experiment. Intellectually challenged children of experimental group exhibit significantly higher gain scores than that of control group in each skill area.

When comparing the mean scores of pretest and posttest on achievement in Social Science and with regards to objectives of achievement in Social Science of the experimental group it showed that the mean score on achievement in Social Science in the posttest is significantly higher than that of pretest for the students using instructional strategy based on Individualized Support Plan. The results of test of significance between mean pre-test and posttest scores with regard to objective of achievement in Social Science namely Remembering, Understanding, Applying and Analyzing it was found that Instructional strategy based on ISP is effective to enhance the achievement in Social Science of intellectually challenged students based on the objectives of achievement.

When comparing the mean score on achievement in Social Science with regard to objectives of achievement in Social Science namely Remembering,

Understanding, Applying and Analyzing the results showed that in Social Science in the post-test is significantly higher than that of pre-test for students not using instructional strategy based on ISP. The mean gain scores on achievement in Social Science and with regards to objectives of achievement in Social Science of experimental and control group, high mean gain score for the experimental group over the control group was noticed. This shows the superiority of the Instructional strategy based on Individualized Plan over the existing method.

Data and results of comparison of estimated marginal mean of Remembering, Understanding, Applying and Analyzing shows that the students taught through the Instructional Strategy based on ISP achieved better when compared to the students taught through the existing method. Effect size of the mean score comparison was find to establish the effectiveness of instructional strategy based on ISP on achievement in Social Science. Result of the effect size calculation showed that the instructional strategy based on ISP has very large effect on achievement in Social Science with regards to Objectives of Remembering, Understanding, Applying and Analyzing.

Concept of implementing Instructional Strategy based on Individualized Support Plan was found to be very effective in enhancing academic achievement among intellectually challenged students. Time limit was found to be a restriction in improving their capabilities. Participation of intellectually challenged in academic activities was first emphasized at school and then at home respectively . Hence support of family can also be considered an important aspect of gain in scores. Splitting the complete task to small components has been used for complex tasks. This strategy was found very efficient for intellectually challenged children in enhancing academic achievement.

Educational Implications

The results of the present study is promising and has bearing upon various dimensions of education. Following educational implications can be drawn with the present study.

Policy Level

The Individualized Support Plan can be introduced as policy at Secondary School level. As ISP is found to be effective on enhancing Achievement, it may be integrated as policy at Secondary School level. Flexible furniture and infrastructure may be provided to facilitate ISP based learning. Evaluation system may be modified incorporating ISP.

Methodology

Lesson transcripts of teachers may be modified to integrate Individualized Support Plan. Methodology may be individualized and actively oriented. Measures can be taken to utilize the service of resource teachers in the teaching learning process.

Curriculum

The curriculum may be tailored integrating Individualized Support Plan for Intellectually Challenged students. Curriculum should focus in individualized instruction.

Other Implications

- Teachers or faculty may be trained on ISP so as to improve the quality of teaching.
- Collaborative ventures between DIET, SCERT, NCERT may be launched for the effective implementation ISP.

- Programmes on ISP may be implemented effectively with community participation.
- The resource teachers may be appointed to support the regular teacher in the education of intellectually challenged students.
- The ISP may be extended to inclusive classroom
- Implementation of Instructional Strategy based on ISP enhances academic achievement of intellectually challenged students
- The methodology should be used for increasing the span of attention of intellectually challenged students.
- Use different types of instruction discussed in the study.
- Support of family plays an important role in enhancing academic achievement of intellectually challenged child.
- Active participation of parents in ISP team should be promoted.
- More emphasis should be laid on research in this field.
- The role of resource teacher in learning activities should be enhanced.
- Teaching-learning material should be modified with the advancement of science and technology.
- Regular teachers, special educators and resource teachers all need to update their knowledge with changing technological advancement
- Teachers must develop skills in collaborative teaming processes, use of Information Technology, co-teaching and interpersonal communication that will enable them to work together to craft different types learning opportunities for learners.
- Parents should be helped to understand that they are the true experts who will be able to do the detailed work that will help their child to learn and develop sophisticated skills.

- Instructional Strategy based on ISP may be utilized for developing higher order thinking viz., Applying, Analyzing, Evaluating and Creating.

Delimitations

1. The study was limited to Kozhikode district only.
2. Only educable (mild and moderate) mentally challenged children were selected as sample of the study.
3. The study has been delimited to 64 educable mentally challenged children.
4. The study was limited to 20 inclusive schools.
5. The present study delimited secondary school students only.

Suggestions for Further Research

1. Similar studies can also be conducted on intellectually challenged children in relation to their demographic variables such as gender, locality, socio-economic status etc.
2. Similar studies can be conducted on intellectually challenged children of different age groups.
3. Similar studies can be conducted on hearing impaired, orthopedically handicapped and visually handicapped.
4. Similar study can also be conducted on intellectually challenged children with epilepsy.
5. Similar study can also be conducted to know the impact of Individualized Support Plan on the different aspects of communication skills in intellectually challenged children.

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APPENDICES

Appendix I

FAROOK TRAINING COLLEGE

LESSON TRANSCRIPTS BASED ON INDIVIDUALIZED SUPPORT PLAN

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Name of the Teacher	: Ranjithlal P.K.		
Name of the School	: GVHSS , Nadakavu.	STD	: IX
Subject	: Social Science	Duration	: 1 Hr.
Unit	: പ്രകൃതിയുടെ കൈകളാൽ	Strength	: 30
Theme	: Vതാഴ്വരകൾ രൂപം കൊള്ളുന്നത്.		

Learning Outcomes

1. ഭൗമോപരിതലത്തിൽ പ്രവർത്തിക്കുന്ന ശക്തികൾ നിരവധി രൂപങ്ങൾ നിർമ്മിക്കുന്നു എന്ന് കുട്ടികൾ മനസ്സിലാക്കുന്നു.
2. വെള്ളത്തിന്റെ ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതനുസരിച്ച് ഭൂരൂപത്തിൽ വരുന്ന മാറ്റത്തെക്കുറിച്ച് കുട്ടികൾ ബോധവാന്മാരാകുന്നു.
3. താഴ്വരകൾക്ക് പ്രത്യേക രൂപം കൈവരുന്നതിനെക്കുറിച്ച് കുട്ടികൾ ബോധവാന്മാരാകുന്നു.
4. 'V'താഴ്വരകൾ രൂപം കൊള്ളുന്നതെങ്ങനെയെന്ന് കുട്ടികൾ മനസ്സിലാക്കുന്നു.
5. 'V' താഴ്വരകളും മറ്റ് താഴ്വരകളും തമ്മിലുള്ള വ്യത്യാസം കുട്ടികൾ വേർതിരിച്ചറിയുന്നു.

Concepts

1. ഭൗമോപരിതലത്തിൽ പ്രവർത്തിക്കുന്ന ശക്തികൾ വിവിധ രൂപങ്ങൾ നിർമ്മിക്കുന്നു.
2. ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതിനനുസരിച്ച് ശക്തമാകുന്ന അപരദന പ്രക്രിയയുടെ ഫലമായി നീർച്ചാലുകളുടെ ആഴം വർദ്ധിക്കുന്നു.
3. നദിയുടെ അടിത്തട്ടിൽ അപരദനം തീവ്രമാകുന്നതോടെ താഴ്വരകൾക്ക് പ്രത്യേക രൂപം കൈവരുന്നു.
4. നദിയുടെ അടിത്തട്ടിൽ അപരദനം നടക്കുന്ന ശക്തമായ അപരദന പ്രക്രിയ 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതിന് ഇടയാക്കുന്നു.
5. അപരദന പ്രക്രിയയുടെ തീവ്രതയിൽ വരുന്ന മാറ്റത്തിനനുസരിച്ച് താഴ്വരകളുടെ രൂപവും മാറുന്നു.

Learning Aids

- Video, Working Model, Chart, Crayons, Pencil

Phase	Learning Process	Leaner's Response
	അധ്യാപകൻ : ക്ലാസ്സിൽ പ്രവേശിക്കുന്നു കുട്ടികൾ : Good Morning Teacher Teacher : Good morning കുട്ടികളുമായി സൗഹാർദ്ദാന്തരീക്ഷത്തിൽ ഏർപ്പെട്ടുകൊണ്ട് കഴിഞ്ഞ ക്ലാസ്സിൽ പഠിപ്പിച്ച പാഠഭാഗത്തെക്കുറിച്ച് സൂചിപ്പിക്കുന്നു. കുട്ടികൾ ഇതുമായി ബന്ധപ്പെട്ട കാര്യങ്ങൾ സംസാരിക്കുന്നു. **ആശയം/ധാരണ** • ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതിനനുസരിച്ച് ശക്തമാകുന്ന അപരദന പ്രക്രിയയുടെ ഫലമായി നീർച്ചാലുകളുടെ ആഴം വർദ്ധിക്കുന്നു. നദിയുടെ അടിത്തട്ടിൽ അപരദനം തീവ്രമാവുന്നതോടെ താഴ്വരകൾക്ക പ്രത്യേക രൂപം കൈവരുന്നു. ഇങ്ങനെയാണ് 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നത്. • അപരദന പ്രക്രിയയുടെ തീവ്രതയിൽ വരുന്ന മാറ്റത്തിനനുസരിച്ച് താഴ്വരകളുടെ രൂപവും മാറുന്നു. അധ്യാപകൻ കുട്ടികളെ സമീപത്തുള്ള ഗ്രൗണ്ടിലേക്ക് കൊണ്ടുപോകുന്നു. പഠനപ്രവർത്തനത്തിൽ സഹായിക്കുന്നതിനായി റണ്ട് റിസോഴ്സ് അധ്യാപകരും സഹായത്തിനു കൂടെയുണ്ട്. അഞ്ചോ ആറോ കുട്ടികൾ വീതമുള്ള ചെറുഗ്രൂപ്പുകളായി തിരിക്കുന്നു. അതിനുശേഷം'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നത് എങ്ങനെയെന്ന് പ്രവർത്തനത്തിലൂടെ കാണിക്കുന്നതിനായി തയ്യാറാക്കിയ ഭൂരൂപത്തിനടുത്ത് കുട്ടികളും അധ്യാപകരും എത്തുന്നു. ഒരു വലിയ മൺകൂന തയ്യാറാക്കിയിട്ടുണ്ട്. അധ്യാപകൻ ആ മൺകൂനയിലേക്ക് വെള്ളം ഒഴിക്കുന്നു. അപ്പോൾ നീരൊഴുക്കിനുള്ള ചാലുകൾ പ്രത്യക്ഷപ്പെടുന്നു. അതിൽ ശക്തമായി വെള്ളംഒരു ഭാഗത്തുതന്നെ ഒഴിക്കുന്നു. അപ്പോൾ അവിടെയുള്ള മണ്ണ് ആഴത്തിൽ ഒലിച്ചുപോകുന്നു. അങ്ങനെ മണ്ണിൽ 'V' ആകൃതി	

Phase	Learning Process	Leaner's Response
PHASE I	രൂപപ്പെടുന്നു.ഇതാണ് 'V' താഴ്വരകൾ.  തുടർന്ന് ഈ പ്രവർത്തനം അധ്യാപകന്റെ സഹായത്തോടെ ഓരോ ഗ്രൂപ്പും ചെയ്യുന്നു. ഈ പ്രവർത്തനം അധ്യാപകനും രണ്ട് റിസോഴ്സ് അധ്യാപകരും നിരീക്ഷിക്കുന്നു. ഈ പ്രവർത്തനത്തിൽ പങ്കാളികളാകാത്ത കുട്ടികളെ കണ്ടെത്തി പ്രവർത്തനം നടത്തുന്നതിന് വ്യക്തിഗതമായി സഹായിക്കുന്നു. എല്ലാവരും ഈ പ്രവർത്തനത്തിൽ പങ്കാളികളാണെന്ന് ഉറപ്പുവരുത്തിയതിനു ശേഷം ഇനിയും ഈ പ്രവർത്തനം തുടർന്നു നടത്തേണ്ടതുണ്ടോ എന്ന് ആരായുന്നു. അങ്ങനെയുള്ള കുട്ടികളുണ്ടെങ്കിൽ അവരെ പ്രവർത്തനം വീണ്ടും വീണ്ടും നടത്തുന്നതിന് അധ്യാപകനും റിസോഴ്സ് അധ്യാപകരും സഹായിക്കുന്നു. പ്രവർത്തനം വിജയകരമായി ചെയ്തകുട്ടികളെ മാറ്റിനിർത്തി പ്രവർത്തനത്തിൽ ബുദ്ധിമുട്ട് നേരിടുന്ന കുട്ടികൾക്ക് കൂടുതൽ അവസരം നൽകുന്നു.	
PHASE II	അധ്യാപകനും റിസോഴ്സ് അധ്യാപകരും കുട്ടികളോടൊപ്പം ക്ലാസ്സിൽ തിരിച്ചെത്തുന്നു. അതിനു ശേഷം ഇതുമായി ബന്ധപ്പെട്ട വീഡിയോ ക്ലാസ്സിൽ പ്രദർശിപ്പിക്കുന്നു. ഒപ്പം അധ്യാപകൻ വിശദീകരണം നൽകിക്കൊണ്ടിരിക്കുന്നു. 	

Phase	Learning Process	Leaner's Response
PHASE III	ഇത് ഒരിക്കൽകൂടി ആവർത്തിക്കുന്നു. വീഡിയോ വീണ്ടും പ്രദർശിപ്പിക്കണമോ എന്ന് ആരായുന്നു. കുട്ടികളുടെ ആവശ്യത്തിനനുസരിച്ച് വീഡിയോ പ്രദർശിപ്പിക്കുന്നു. തുടർന്ന് 'V' ആകൃതിയിലുള്ള താഴ്വരയുടെ ചിത്രം പ്രദർശിപ്പിക്കുന്നു. കുട്ടികളോട് പ്രതികരിക്കാൻ ആവശ്യപ്പെടുന്നു. ശരിയായി പ്രതികരിക്കാൻ കഴിയാത്ത കുട്ടികളെ അധ്യാപകനും റിസോഴ്സ് അധ്യാപകരും കണ്ടെത്തി ആ കുട്ടികൾക്ക് വ്യക്തിഗതമായി പ്രത്യേകം വിശദീകരണം നൽകുന്നു. 'V' ആകൃതിയിലുള്ള താഴ്വര രൂപപ്പെടുന്നതിനെക്കുറിച്ച് അധ്യാപകൻ ലഘുചോദ്യങ്ങൾ ചോദിക്കുകയും അധ്യാപകനും റിസോഴ്സ് അധ്യാപകരും നിരീക്ഷിക്കുകയും ചെയ്യുന്നു. ആശയഗ്രഹണം സാധ്യമാകാത്ത കുട്ടികളെ കണ്ടെത്തി വീണ്ടും പഠന പ്രവർത്തനം വ്യക്തിഗതമായി നടത്തുന്നു. ഈ പ്രവർത്തനം ആശയഗ്രഹണം എല്ലാകുട്ടികൾക്കും സാധ്യമാകുന്നതുവരെ നടത്തുന്നു. കുട്ടികളോട് 'V' ആകൃതി വരയ്ക്കാനും നിറം നൽകാനും ആവശ്യപ്പെടുന്നു. ആവകൃമായ പേപ്പർ, പെൻസിൽ, ക്രയോൺസ് എന്നിവ അധ്യാപകൻ കുട്ടികൾക്ക് വിതരണം ചെയ്തിട്ടുണ്ട്.  ഈ പ്രവർത്തനവും അധ്യാപകനും റിസോഴ്സ് അധ്യാപകരും നിരീക്ഷിക്കുകയും ബുദ്ധിമുട്ട് നേരിടുന്ന കുട്ടികളെ കണ്ടെത്തി വ്യക്തിഗതമായി സഹായിക്കുകയും പഠന പ്രവർത്തനം പൂർത്തിയാക്കുകയുംചെയ്യുന്നു.	

Phase	Learning Process	Leaner's Response
PHASE IV	**ക്രോഡീകരണം** നദിയുടെ ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതിനനുസരിച്ച് ശക്തമാകുന്ന അപരദന പ്രക്രിയയുടെ ഫലമായി നീർച്ചാലുകളുടെ ആഴം വർദ്ധിക്കുകയും നദിയുടെ അടിത്തട്ടിൽ അപരദനം തീവ്രമാകുന്നതോടെ 'V' താഴ്വരകൾ രൂപം കൊള്ളുകയും ചെയ്യുന്നു. അപരദന പ്രക്രിയയുടെ തീവ്രതയിൽ വരുന്ന മാറ്റത്തിനനുസരിച്ച് താഴ്വരകളുടെ രൂപവും മാറുന്നു. **Home Assignment:** ഒരു പേപ്പറിൽ നദി ഉത്ഭവിച്ച് കടലിൽ പതിക്കുന്നതു വരെയുള്ള ഭാഗത്തെ ആസ്പദമാക്കി ചിത്രം വരയ്ക്കുക.	

Appendix II

FAROOK TRAINING COLLEGE

LESSON TRANSCRIPTS BASED ON INDIVIDUALIZED SUPPORT PLAN

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Name of the Teacher	: Ranjithlal P.K.		
Name of the School	: GVHSS , Nadakavu.	STD	: IX
Subject	: Social Science	Duration	: 1 Hr.
Unit	: By the hands of nature	Strength	: 30
Theme	: How 'V' valleys are formed.		

Learning Outcomes

1. Students understands that varied land forms are created by external forces on earth.
2. Students identify changes in land forms are caused by the forceful flow of water.
3. Students understands how valleys are getting peculiar shapes.
4. Students understands how 'V' valleys are formed.
5. Students distinguishes between 'V' valleys and other forms of valleys

Concepts

1. Varied landforms are created by the continuous process carried out by external forces.
2. Due to forceful erosion the depth of streams increases vehemently.
3. The valleys takes a distinct shape as a result of the intensity of erosion.
4. Intense erosion of the river results in forming 'V' valleys.
5. Changes in the intensity of erosion results in formation of different forms of valleys.

Learning Aids

Video, Working Model, Chart

PHASES	Learning Process	Learners' Response
PHASE I	Teacher enters the class Students : Good Morning teacher Teacher : Good Morning The teacher interacts with the students in a very friendly manner. The teacher mentions the topic and the students are encouraged to supplement the concepts **Concepts** • Deepening of gullies occurs through intense erosion Resulting from an increase in the velocity of water flow. The valleys take a distinct shape as a result of the intensity of erosion along the river bed. Such valleys are called ' V' shaped valleys. • The valleys take different shapes due to changes in the intensity of erosion The teacher with the help of two resource teachers takes the students to the nearby ground. Five small group of students are formed consisting of six students in each group. After this the teacher and students assemble near a makeshift landform in order to conduct an experiment on the formation of 'V' Valleys. The teacher pours the water intensely on top of the landform. This results in erosion of sand , stones, plants, etc. When the erosion becomes intense the shape of the valley turns into 'V'. 	

PHASE II	Next students are asked to perform the task with the help of teacher and resource teachers. Students are asked to do the activity group wise. Participation of each and every student is ensured. Through visual observation the teacher identify those who find difficulty in doing the task. The teacher and resource teachers individually assist those who find difficulty in performing the task successfully. The teacher repeats the tasks in order to make sure that all students Successfully completes the task. After the experiment the teachers and students returns to the class. The teacher shows a video related to the topic. While showing the video the teacher supplements the video in simple words.  The teacher repeats the video as demanded by the students who find difficulty in understanding the concept. The teacher identifies the students who are lagging behind and give individualized attention and support. The students are encouraged to express ideas in a flexible manner. The teacher asks very simple questions about the formation of 'V' valleys. The students are prompted to answer the question in flexible ways like orally,	

PHASE III	drawing, action etc. The teacher identify those are lagging behind in answering questions. Individualized support in the form of care , repetition of the task etc are provided to such students. The teacher ensures the successful completion of the task by each and every student. Next the teacher provides paper , pencil, crayons etc to the students. The students are asked to draw the picture of 'V' shaped valleys. The teacher identifies who find difficulty in completing the task successfully. The teacher helps those who experience difficulty in doing the task properly. Individualized support is ensured for each and every student.  **Compilation** Deepening of gullies occurs through intense erosion resulting from an increase in the velocity of water flow. The valleys take a distinct shape as result of the intensity of erosion along the river bed. These type of valleys are called 'V' shaped valleys. The teacher appreciates all students who completed the tasks successfully.	
PHASE IV	**Home assignment.** Draw the picture of a beautiful river starting from mountain to the sea.	

Appendix III

FAROOK TRAINING COLLEGE

LESSON TRANSCRIPT BASED ON EXISTING METHOD

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Name of the teacher	: Ranjithlal. P.K	Std	: IX
Subject	: Social Science	Duration	: 45 mts
Unit	: പ്രകൃതിയുടെ കൈകളാൽ	Strength	: 34
Topic	: നദിയുടെ അപരദനവും 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതും		
Name of the School	: G.V.H.S.S, Kinasseri		

Content Analysis

Terms	നദിയുടെ അപരദനം, 'V' താഴ്വരകൾ
Facts	• ഒഴുക്കിന്റെ വേഗം, ഒഴുകുന്ന പ്രദേശത്തെ ചരിവ്, ശിൽപ്പഘടന എന്നിവ നദിയുടെ അപരദന തീവ്രതയെ സ്വാധീനിക്കുന്നു. • നദിയുടെ അടിത്തട്ടിൽ അപരദനം തീവ്രമാകുന്നതോടെ താഴ്വരകൾക്ക് പ്രത്യേക രൂപം കൈവന്ന് 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നു.
Concepts	• നദിയുടെ അപരദനം, 'V' താഴ്വരകൾ. • നദി ഒഴുക്കുക്കൊണ്ടു പോകുന്ന ചരൽ, മണൽ, ഉരുളൻ കല്ലുകൾ തുടങ്ങിയ ശിലാപദാർത്ഥങ്ങൾ പാറകൾക്ക് തേയ്മാനം ഉണ്ടാക്കുന്നു. • ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതിനനുസരിച്ച് ശക്തമാകുന്ന അപരദന പ്രക്രിയയുടെ ഫലമായി 'V' താഴ്വരകൾ സൃഷ്ടിക്കപ്പെടുന്നു.
Learning Outcomes	• നദിയുടെ അപരദനം നടക്കുന്നുതെങ്ങിനെയെന്നും അതിന്റെ കാരണങ്ങളും വിശദമാക്കാൻ കുട്ടിയ്ക്കു കഴിയുന്നു. 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതെങ്ങനെയെന്ന് വിശദീകരിക്കുന്നു.

Process Skills	:	നിരീക്ഷണം ചർച്ച ചെയ്യൽ
Previous Knowledge	:	വെള്ളത്തിന്റെ ഒഴുക്ക് മണ്ണൊലിപ്പിന് കാരണമാണെന്നും ശക്തമായ ഒഴുക്ക് ആഴമുള്ള താഴ്വര സൃഷ്ടിക്കുന്നുവെന്നും കുട്ടി മനസ്സിലാക്കിയിട്ടുണ്ട്.
Values and attitudes	:	ശാസ്ത്രീയ മനോഭാവം ഉണ്ടാവുന്നു.
Learning Materials	:	ടെക്സ്റ്റ് ബുക്ക്, മാപ്പുകൾ
Expected Product	:	അപരദനവും 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതും എന്തെന്ന് വിശദീകരിക്കാൻ കഴിയുന്നു.

Learning Experience

Process	Responses
മഴക്കാലത്ത് വെള്ളം ഒഴുകുന്നത് നിരീക്ഷിച്ചിട്ടുണ്ടോ എന്ന് കുട്ടികളോട് ചോദിക്കുന്നു. കുട്ടികൾ അവരുടെ അനുഭവം പങ്കു വെയ്ക്കുന്നു. **Activity. 1** വെള്ളം ഒഴുകിപ്പോകുന്നതിന്റെ ചിത്രം കാണിക്കുന്നു. ചിത്രം ശക്തമായ വെള്ളത്തിന്റെ ഒഴുക്കിനെ കാണിക്കുന്നു. **Points for Discussion** 1. വെള്ളത്തിന്റെ ഒഴുക്കും അളവും തമ്മിലുള്ള ബന്ധം എന്താണ്? 2. വെള്ളത്തോടൊപ്പം ഒഴുകിപ്പോകുന്നത് എന്തെല്ലാമാണ്? 3. വെള്ളത്തിന്റെ ഒഴുക്കിനെ സ്വാധീനിക്കുന്ന ഘടകങ്ങൾ എന്തെല്ലാമാണ്? **Consolidation** വെള്ളത്തിന്റെ ഒഴുക്ക് അപരദനത്തിന് കാരണമാകുന്നു. **Activity. 2** അപരദനം നടക്കുന്നതിന്റെ ചിത്രം നിരീക്ഷിക്കുന്നു. വെള്ളത്തോടൊപ്പം ചരൽ, മണൽ, ഉരുളൻ കല്ലുകൾ എന്നിവ ഒഴുകിപ്പോകുന്നത് മനസ്സിലാക്കുന്നു. **Points for Discussion** • വെള്ളത്തോടൊപ്പം ഒഴുകിപ്പോകുന്ന പദാർത്ഥങ്ങൾ എന്തെല്ലാമാണ്? • ശക്തമായ നീരൊഴുക്കിനുള്ള കാരണം എന്താണ്?	

Process	Responses
Consolidation വെള്ളത്തിന്റെ ശക്തമായ ഒഴുക്ക് ചരൽ, മണൽ. ഉരുളൻ കല്ലുകൾ എന്നിവ താഴ്ന്ന പ്രദേശങ്ങളിൽ അടിയുന്നതിന് കാരണമാകുന്നു. **Activity. 3** ചിത്ര നിരിക്ഷണം, ചർച്ച എന്നിവയിലൂടെ വിവിധ സന്ദർഭങ്ങൾ വിശകലനം ചെയ്ത് അപരദനം നടക്കുന്നതിനെക്കുറിച്ച് ക്രോഡീകരിക്കുന്നു. **Points for Discussion** ചിത്രങ്ങൾ നിരീക്ഷിച്ച് ജലത്തിന്റെ ഒഴുക്കിനെക്കുറിച്ച് എഴുതുക. വെള്ളത്തിന്റെ ഒഴുക്കിനോടൊപ്പം ഒഴുകുന്നത് എന്തെല്ലാമാണെന്ന് കണ്ടെത്തുക. മണ്ണ്. ചരൽ, ഉരുളൻ കല്ലുകൾ എന്നിവയുടെ ചിത്രങ്ങൾ നിരീക്ഷിച്ച് ചുവടെയുള്ള ചോദ്യാവലി പൂർത്തിയാക്കുന്നു. ജലത്തിന്റെ ഒഴുക്ക് ഏതെല്ലാം പദാർത്ഥങ്ങളെയാണ് ഒഴുക്കിക്കൊണ്ടുവരുന്നത്. ജലത്തിന്റെ ഒഴുക്കിന്റെ ഫലമായി ഉപരിതലത്തിൽ സംഭവിക്കുന്ന മാറ്റം എന്താണ്? **Consolidation** • നദി ഒഴുക്കിക്കൊണ്ടുപോകുന്ന ചരൽ, മണൽ, ഉരുളൻ കല്ലുകൾ തുടങ്ങിയശിലാ പദാർത്ഥങ്ങൾ അടിത്തട്ടിലും ഇരുവശങ്ങളിലുമുള്ള ശിലകളിൽ ഉരസുന്നതിനും പാറകൾക്ക് തേയ്മാനം ഉണ്ടാക്കുകയും ചെയ്യുന്നു. • ഒഴുക്കിന്റെ വേഗം, ഒഴുകുന്ന പ്രദേശത്തെ ചരിവ്, ശിലാഘടന എന്നിവ നദിയുടെ അപരദന തീവ്രതയെ സ്വാധീനിക്കുന്ന ഘടകങ്ങളാണ്. **Activity. 4** ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതിനനുസരിച്ച് ശക്തമാകുന്ന അപരദന പ്രക്രിയയുടെ ഫലമായി നീർച്ചാലുകളുടെ ആഴം വർദ്ധിക്കുന്നു. ഇത് 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതിനിടയാക്കുന്നു.	

Process	Responses
Points for Discussion 1. തീവ്രമായ ഒഴുക്കിന്റെ ഫലമായി നീർച്ചാലുകൾക്ക് എന്ത് സംഭവിക്കുന്നു? 2. താഴ്വരകൾക്ക് പ്രത്യേക രൂപം കൈവരുന്നതെങ്ങിനെ? 3. 'V'താഴ്വരകൾ രൂപംകൊള്ളുന്നത് എങ്ങിനെ? **Consolidation** ഒഴുക്കിന്റെ വേഗം വർദ്ധിക്കുന്നതിനനുസരിച്ച് ശക്തമാകുന്ന അപരദന പ്രക്രിയയുടെ നീർച്ചാലുകളുടെ ആഴം വർദ്ധിക്കുന്നു. നദിയുടെ അടിത്തട്ടിന് അപരദനം തീവ്രമാകുന്നതോടെ താഴ്വരകൾക്ക് പ്രത്യേക രൂപം കൈവരുന്നു. ഇങ്ങനെയാണ് 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നത്. **Recapitualization** നദിയുടെ അപരദനം നടക്കുന്നതെങ്ങനെ? 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതെങ്ങനെ/ **Follow up Activity** നദിയുടെ അപരദനവും 'V' താഴ്വരകൾ രൂപം കൊള്ളുന്നതിനെയും കുറിച്ച് ഒരു കുറിപ്പ് തയ്യാറാക്കുക.	

Appendix IV

FAROOK TRAINING COLLEGE

ACHIEVEMENT TEST IN SOCIAL SCIENCE

(DRAFT)

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Class IX

Marks: 40
Time: 1 Hr.

Instruction:

- This is a test on Social Science. In this test there are altogether 40 questions. Each question carries 1 mark.
- Read the following questions carefully. For each question four options- a, b, c and d are given. Mark your answer by putting tick mark for the correct answer. Nothing should be written on the question paper.

---

1. What causes formation of diverse land forms?
   a) Flowing Water b) Thunder & lightning
   c) Atmosphere d) Temperature
2. The Surface of the earth is ----------
   a) Diverse b) Flat c) Hard d) Cold
3. Which external agent causes formation of landforms?
   a) Wind b) Temperature c) Trees d) Field
4. Which agent doesn't cause formation of landform?
   a) Wind b) Glacier c) Waves d) Temperature
5. The process by which rock particles are moving from one place to another place is known as ----------
   a) Friction b) Erosion c) Waterfall d) Lake
6. When slope increases, the intensity of water flow ----------
   a) Decreases b) No change
   c) Increases d) Increases and decreases
7. Which among the following is not affected by erosion?
   a) Gravel b) Sand c) Round pebbles d) Atmosphere
8. Where do river originates?
   a) From the springs of high altitude b) From the air
   c) From these d) From the plains

9. Many springs causes the formations of ----------
   a) Mountain b) River c) Sea d) Plain
10. The branch of geography which deals with the study of origin and evolution of landforms is called
   a) Science b) geomorphology c) Biology d) Physics
11. The origin of river is called ----------
   a) River mouth b) Edge c) Source d) Valley
12. The place where river enters into the sea is called ----------
   a) Mountain b) River mouth c) River bank d) Source
13. Which among the following doesn't affect the flow of river?
   a) The Volume of Water b) Direction
   c) Slope of the terrain d) Temperature
14. How many stages are there in the course of a river?
   a) Two b) Five c) Three d) Four
15. Which is the upper stage of a river course?
   a) Upper course b) Middle course c) Lower course d) Plain
16. The course of the river flowing along the low slope areas of bottom mountains in ----------
   a) Middle course b) Lower course
   c) Upper course d) Waterfall
17. Lower course is the flow of the river along the ----------
   a) Plains b) Hills c) Forests d) Lakes
18. Which agent forms 'V' shaped valleys?
   a) Glacier b) River c) Wind d) Waves
19. The landform formed when there is intense erosion is called --------
   a) Ocean b) Lake c) River mouth d) 'V' shaped valley
20. Soft rock erosion in the upper course of the river leads to the formation of --
   a) River b) Waterfall c) Ocean d) Hills
21. When do river bends and flows ?
   a) wind blows b) flows along plains
   c) flows along slopes d) when disruption occurs
22. The process of dumping rock particles to low lying regions due to intense erosion is called ----------
   a) Deposition b) Soil erosion c) Abrasion d) Waterfall

23. Bending course of a river is called ----------

a) Oceans b) Meanders c) Streams d) River mouth

24. What will happen to flow of water when slope Mir eases?

a) Don't flow b) Flows slowly

c) Flows speedily d) Bends

25. Which land form is having high elevator?

a) Hills b) Sea c) Field d) Plain

26. The geomorphic agent that couldn't move pebbles/gravel?

a) Water b) Wind c) Snow d) Trees

27. It doesn't rain in deserts. How do sand moves there?

a) One to wind b) One to rain

c) Due to waves d) Due to snow

28. What is the reason for no land slide in forest areas?

a) No rain b) No wind

c) No waves d) Tree roots prevent the soil erosion

29. What causes intense farming in river banks?

a) Due to flood b) Presence of waves

c) Fertile soil dumps d) No wind

30. Which course of the river has intense erosion?

a) Lower course b) Middle course c) Erosion d) Upper course

31. Where do water flows?

a) From top to bottom b) From bottom to top

c) From flat plain d) In the air

32. Name the process by which river can polish even hard rocks in its course of flow?

a) Friction b) Erosion c) Abrasion d) Soil erosion

33. Which course of the river has intense sediments?

a) Lower course b) Middle course c) Erosion d) Upper course

34. Landform created by the erosion and depositional activities of rivers are called ------

a) Rocks b) Lakes c) Plains d) Fluvial landforms

35.What is the reason for sand slide in sea banks?

a) Due to wind b) Due to waves c) Due to trees d) Due to river

36. Which course of the river has intense depositional activities?

a) Lower course b) Middle course c) Deposition d)Soil erosion

37. Which course of the river has no depositional activities?

d) Upper course b) Lower course c) Abrasion d) Middle course

38. Depositional landform found in the lower course of the river is ----

a) Island b) Delta c) Soil d) Rocks

39. Which course of the river has more volume of water?

a) Lower course b) Middle course c) Plains d) Lake

40. Name the land form formed due to loops in rivers?

a) Oxbo lake b) Mountains c) Plains d) waterfalls

Appendix V

FAROOK TRAINING COLLEGE

ACHIEVEMENT TEST IN SOCIAL SCIENCE

(FINAL)

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Class IX

Marks: 30
Time: 1 Hr.

Instruction:

- This is a test on Social Science. In this test there are altogether 40 questions. Each question carries 1 mark.
- Read the following questions carefully. For each question four options- a, b, c and d are given. Mark your answer by putting tick mark for the correct answer. Nothing should be written on the question paper.

---

1. What causes formation of diverse land forms?
   a) Flowing Water b) Thunder & lightning
   c) Atmosphere d) Temperature
2. The Surface of the earth is ----------
   a) Diverse b) Flat c) Hard d) Cold
3. Which external agent causes formation of landforms?
   a) Wind b) Temperature c) Trees d) Field
4. Which agent doesn't cause formation of landform?
   a) Wind b) Glacier c) Waves d) Temperature
5. The process by which rock particles are moving from one place to another place is known as ----------
   a) Friction b) Erosion c) Waterfall d) Lake
6. When slope increases, the intensity of water flow ----------
   a) Decreases b) No change
   c) Increases d) Increases and decreases
7. Which among the following is not affected by erosion?
   a) Gravel b) Sand c) Round pebbles d) Atmosphere
8. Where do river originates?
   a) From the springs of high altitude b) From the air
   c) From these d) From the plains

9. Many springs causes the formations of ----------
   a) Mountain b) River c) Sea d) Plain
10. The origin of river is called ----------
   a) River mouth b) Edge c) Source d) Valley
11. The place where river enters into the sea is called ----------
   a) Mountain b) River mouth c) River bank d) Source
12. Which among the following doesn't affect the flow of river?
   a) The Volume of Water b) Direction
   c) Slope of the terrain d) Temperature
13. How many stages are there in the course of a river?
   a) Two b) Five c) Three d) Four
14. Which is the upper stage of a river course?
   a) Upper course b) Middle course c) Lower course d) Plain
15. The course of the river flowing along the low slope areas of bottom mountains in ----------
   a) Middle course b) Lower course
   c) Upper course d) Waterfall
16. Lower course is the flow of the river along the ----------
   a) Plains b) Hills c) Forests d) Lakes
17. Which agent forms 'V' shaped valleys?
   a) Glacier b) River c) Wind d) Waves
18. The landform formed when there is intense erosion is called --------
   a) Ocean b) Lake c) River mouth d) 'V' shaped valley
19. Soft rock erosion in the upper course of the river leads to the formation of --
   a) River b) Waterfall c) Ocean d) Hills
20. When do river bends and flows?
   a) Wind blows b) Flows along plains
   c) Flows along slops d) When disruption occurs
21. Bending course of a river is called ----------
   a) Oceans b) Meanders c) Streams d) River mouth
22. What will happen to flow of water when slope Mir eases?
   a) Don't flow b) Flows slowly
   c) Flows speedily d) Bends

23. Which land form is having high elevator?
    a) Hills b) Sea c) Field d) Plain
24. The geomorphic agent that couldn't move pebbles/gravel?
    a) Water b) Wind c) Snow d) Trees
25. It doesn't rain in deserts. How do sand moves there?
    a) One to wind b) One to rain
    c) Due to waves d) Due to snow
26. What is the reason for no land slide in forest areas?
    a) No rain b) No wind
    c) No waves d) Tree roots prevent the soil erosion
27. What causes intense farming in river banks?
    a) Due to flood b) Presence of waves
    c) Fertile soil dumps d) No wind
28. Where do water flows?
    a) From top to bottom b) From bottom to top
    c) From flat plain d) In the air
29. What is the reason for sand slide in sea banks?
    a) Due to wind b) Due to waves c) Due to trees d) Due to river
30. Name the land form formed due to loops in rivers?
    a) Oxbo lake b) Mountains c) Plains d) waterfalls

Appendix VI

FAROOK TRAINING COLLEGE

ACHIEVEMENT TEST IN SOCIAL SCIENCE

(FINAL- MALAYALAM)

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Class IX | Marks: 30 | Time: 1 Hr.

നിർദ്ദേശങ്ങൾ

താഴെ തന്നിരിക്കുന്ന ചോദ്യങ്ങൾ വായിച്ച് ശരിയുത്തരം ഉത്തരത്തിനു നേരെ ✓ അടയാളത്തിൽ രേഖപ്പെടുത്തുക. എല്ലാചോദ്യത്തിനും ഉത്തരംരേഖപ്പെടുത്തുക.

1. വൈവിധ്യമാർന്ന ഭൂരൂപം ഉണ്ടാകുന്നതിനുള്ള കാരണം ഏത്?

   a) ഒഴുകുന്ന വെള്ളം b)ഇടിമിന്നൽ c)അന്തരീക്ഷം d)ഊഷ്മാവ്

2. ഭൂമിയുടെ ഉപരിതലം---------ആണ്.

   a) വൈവിധ്യം നിറഞ്ഞത് b)നിരപ്പായത് c)ഉറപ്പുള്ളത് d)തണുപ്പുള്ളത്

3. ഭൂരൂപങ്ങൾ ഉണ്ടാകുന്നതിനുള്ള ബാഹ്യശക്തികൾ ഏത്?

   a) കാറ്റ് b)ചൂട് c)മരങ്ങൾ d)വയൽ

4. ഭൂരൂപത്തിൽമാറ്റംവരുത്താത്തത്?

   a) കാറ്റ് b)ഹിമാനികൾ c)തിരമാല d)ചൂട്

5. ശിലാവസ്തുക്കൾ ഒരിടത്തുനിന്ന് മറ്റൊരിടത്തേയ്ക്ക് നീക്കിക്കൊണ്ട് പോകുന്ന പ്രക്രിയയാണ്--------

   a) ഘർഷണം b)അപരദനം c)വെള്ളച്ചാട്ടം d)തടാകം

6. ചരിവ് കൂടുന്നതിനനുസരിച്ച് വെള്ളത്തിന്റെ ഒഴുക്ക്-------ആകുന്നു.

   a)കുറയുന്നു b)മാറ്റമില്ല
   c)കൂടുന്നു d)കൂടുകയും കുറയുകയും ചെയ്യുന്നു

7. അപരദനത്തിന് വിധേയമാകാത്തത്?

   a)ചരൽ b)മണൽ c) ഉരുളൻ കല്ലുകൾ d)അന്തരീക്ഷം

8. നദി ഉത്ഭവിക്കുന്നത് എവിടെ നിന്നാണ്?

   a)ഉയർന്ന പ്രദേശങ്ങളിലെ നീരുറവകളിൽ നിന്ന് b)വായുവിൽ നിന്ന്
   c) കടലിൽ നിന്ന് d)സമതലങ്ങളിൽ

9. പല അരുവികൾ ചേർന്നാണ്-----രൂപം കൊള്ളുന്നത്.

   a)പർവതം b)നദി c)കടൽ d)സമതലം

10. നദി തുടങ്ങുന്ന സ്ഥാനത്തെ ---------എന്ന് പറയുന്നു.

a)നദീമുഖം b)മുനമ്പ് c)പ്രഭവസ്ഥാനം d)താഴ്വര

11. നദി കടലിൽ പതിക്കുന്ന സ്ഥാനത്തെ ----------എന്നു പറയുന്നു.

a)പർവതം b)നദീമുഖം c)തീരപ്രദേശം d)പ്രഭവസ്ഥാനം

12. നദിയുടെ ഒഴുക്കിനെ സ്വാധീനിക്കാത്തത്?

a)ജലത്തിന്റെ അളവ് b)ശിലാഘടന

c)പ്രദേശത്തിന്റെ ചരിവ് d)ഊഷ്മാവ്

13. നദീമാർഗത്തെ എത്രയായി തരംതിരിക്കാം?

a)രണ്ടായി b)അഞ്ചായി c)മൂന്നായി d)നാലായി

14. നദിയുടെ ഏറ്റവും ഉയർന്ന ഘട്ടം?

a)ഉപരിഘട്ടം b)മധ്യഘട്ടം c)കീഴ്ഘട്ടം d)സമതലം

15. ചരിവ്കുറഞ്ഞ അടിവാരമേഖലയിലൂടെ നദി ഒഴുകുന്ന ഭാഗമാണ്-------

a)മധ്യഘട്ടം b)കീഴ്ഘട്ടം c)ഉപരിഘട്ടം d)വെള്ളച്ചാട്ടം

16. കീഴ്ഘട്ടം--------- ഭാഗത്ത് കൂടിയുള്ള നദിയുടെ ഒഴുക്കാണ്.

a)സമതലത്തിലൂടെ b)കുന്നുകളിലൂടെ

c)വനത്തിലൂടെ d)കായയിലൂടെ

17. 'V' ആകൃതിയിലുള്ള താഴ്വരകളെ-----എന്നുവിളിക്കുന്നു.

a)നദി b)സമുദ്രം c)'V' താഴ്വരകൾ d)തീരപ്രദേശം

18. അപരദനം കൂടുതൽ നടക്കുമ്പോൾ രൂപം കൊള്ളുന്നതാണ്----------

a)സമുദ്രം b)കായൽ c)നദീമുഖം d)'V' താഴ്വരകൾ

19. ഉപരിഘട്ടത്തിൽ മൃദുശിലകൾ കൂടുതൽ അപരദനത്തിന് വിധേയമാകുന്നത് ----രൂപം കൊള്ളുന്നതിന് കാരണമാകുന്നു.

a)നദി b)വെള്ളച്ചാട്ടം c)സമുദ്രം d)കുന്നുകൾ

20. നദി വളഞ്ഞൊഴുകുന്നത് എപ്പോൾ?

a)കാറ്റടിക്കുമ്പോൾ b)സമതലത്തിലൂടെ ഒഴുകുമ്പോൾ

c)ചരിഞ്ഞ് ഒഴുകുമ്പോൾ d)തടസ്സങ്ങളുണ്ടാകുമ്പോൾ

21. വളഞ്ഞ് ഒഴുകുന്ന നദികളെയാണ്----------എന്നു പറയുന്നത്?

a)സമുദ്രങ്ങൾ b)വലയങ്ങൾ അഥവാ മിയാൻഡറുകൾ

c)അരുവികൾ d)നദീമുഖം

22. ചരിവ് കൂടുതലുള്ള സ്ഥലത്തുകൂടി വെള്ളം?

a)ഒഴുകില്ല b)പതുക്കെ ഒഴുകുന്നു

c)വേഗത്തിൽ ഒഴുകുന്നു d)വളയുന്നു

23. ഉയരം കൂടുതലുള്ള ഭൂരൂപം ഏത്?

a)മലകൾ b)കടൽ c)വയൽ d)സമതലം

24. ചെറിയ കല്ലുകളെ നീക്കിക്കൊണ്ടു പോകാത്തത്?

a)വെള്ളം b)കാറ്റ് c)മഞ്ഞുകട്ട d)മരങ്ങൾ

25. മരുഭൂമിയിൽ മഴ പെയ്യില്ലല്ലോ? പിന്നെങ്ങനെയാണ് മണൽ നീങ്ങുന്നത്?

a)കാറ്റ്മൂലം b)മഴമൂലം

c)തിരമാലകൾ മൂലം d)മഞ്ഞുകട്ടകൾമൂലം

26. വന പ്രദേശത്ത് മണ്ണ് ഇടിയാതിരിക്കുന്നതിന് കാരണം?

a)മഴയില്ലാത്തതിനാൽ

b)കാറ്റില്ലാത്തതിനാൽ

c)തിരമാലകൾ ഇല്ലാത്തതിനാൽ

d)മരങ്ങളുടെ വേരുകൾ മണ്ണിനെ പിടിച്ചു നിറുത്തുന്നതിനാൽ

27. നദീതീരങ്ങളിൽ വലിയതോതിൽ കൃഷി നടത്താൻ കാരണം?

a)വെള്ളപ്പൊക്കം കാരണം b)തിരമാലകൾ ഉള്ളതുകൊണ്ട്

c)വളക്കൂറുള്ള മണ്ണ് അടിയുന്നതുകൊണ്ട് d)കാറ്റില്ലാത്തതുകൊണ്ട്

28. ജലം ഒഴുകുന്നത്?

a)ഉയർന്ന സ്ഥലത്തു നിന്ന് താഴ്ന്ന സ്ഥലത്തേക്ക്

b)താഴെ നിന്ന് മുകളിലേക്ക്

c)നിരന്ന സ്ഥലത്തിലൂടെ

d)വായുവിലൂടെ

29. കടൽ തീരത്ത് മണൽ ഇടിഞ്ഞു പോകുന്നതിനുള്ള കാരണം?

a)കാറ്റ് മൂലം b)തിരമാലകൾ മൂലം

c)മരങ്ങൾ മൂലം d)നദികൾ മൂലം

30. നദിയിലെ വലയങ്ങൾ മൂലം രൂപം കൊള്ളുന്നതാണ്?

a)ഓക്സ്ബോ തടാകങ്ങൾ b)പർവ്വതങ്ങൾ

c)സമതലങ്ങൾ d)വെള്ളച്ചാട്ടങ്ങൾ

Appendix VII

FAROOK TRAINING COLLEGE

ACHIEVEMENT TEST IN SOCIAL SCIENCE

(FINAL)

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

SCORING KEY

Name of Student…….. Class……

Roll No…….. Div…..……..

For each question four options are given. Choose the correct answer and put a tick mark in the box. Please don't forget to answer all questions. Each carry one mark.

Qn. No	a	b	c	d
1	✓			
2	✓			
3	✓			
4				✓
5		✓		
6			✓	
7				✓
8	✓			
9		✓		
10			✓	
11		✓		
12				✓
13			✓	
14	✓			
15	✓			

Qn. No	a	b	c	d
16	✓			
17			✓	
18				✓
19		✓		
20				✓
21		✓		
22			✓	
23	✓			
24				✓
25	✓			
26				✓
27			✓	
28	✓			
29		✓		
30	✓			

Appendix VIII

FAROOK TRAINING COLLEGE

QUESTIONNAIRE FOR TEACHERS

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

Name :

Name of School:

Experience (in Year) :

Gender :

Read the following statements carefully. For each statements three responses- Agree, Partially agree, Disagree are given. How far each statement is right about you. Mark your answer by putting a tick mark in the column provided. Please don't forget to mark your response for all statements.

Item No	Item	Agree	Partially Agree	Disagree
1	Intellectually challenged pupils shows interest in classroom learning activities			
2	Lack of proper training for teachers to deal with intellectually challenged students creates difficulty in the class			
3	intellectually challenged students attend school regularly as their counterparts			
4	The evaluation procedure for intellectually challenged students should be reformed			
5	Inclusive education is very effective for intellectually challenged students			
6	Other normal students in the class assist intellectually challenged students in learning activities			
7	The activities of resource teachers are very effective for intellectually challenged students			
8	Intellectually challenged students shows genuine interest in IT enabled class			
9	Intellectually challenged students keep genuine friendship with other normal students in the class			

Item No	Item	Agree	Partially Agree	Disagree
10	Intellectually challenged students face difficulty in recollecting the learned material properly			
11	Intellectually challenged students experience difficulty in concentrating on the subject matter properly			
12	Intellectually challenged students shows difficulty in assimilating complex learning activities			
13	Role play can be used as an effective learning strategy for teaching intellectually challenged students			
14	Presenting the learning activities in simple words by linking to the day to day life experience is very effective for intellectually challenged students			
15	Genuine interest and helpful attitude of the parents in learning activities results in higher achievements of intellectually challenged students			
16	Modernization of the curriculum is needed for making teaching of intellectually challenged students more effective			
17	The existing curriculum creates lot of difficulties for intellectually challenged students in actively participating in learning activities			
18	The intellectually challenged students shows Genuine interest in experimental and activity oriented method of teaching			
19	Inclusive education is very useful for enhancing academic achievement of intellectually challenged students			
20	The repetition of learning activities are essential for the proper achievement of intellectually challenged students			

Appendix IX

FAROOK TRAINING COLLEGE

STUDENT PROFILE

Dr. Hassankoya M.P.
Assistant Professor

Ranjithlal P.K
Research Scholar

This form is to be filled by the Resource teacher

1.	Name of the student	
2	School	
3	Class	
4	Date of birth	
5	Name of Father	
6	Occupation of Father	
7	Name of Mother	
8	Occupation of Mother	
9	Residential address	
10	Monthly income of the family	
11	Strengths of the Student	
12	Success of the student	
13	Greatest challenges of the Student	
14	Details of Disability as per the certificate issued by the concerned Medical Board. Attach a copy of medical certificate	
15	Other information if any	

Place : Sign

Date : Name of the Resource teacher