EFFECTIVENESS OF MODULE ON TEACHING OF GEOGRAPHY IN TERMS OF ACHIEVEMENT AND REACTION OF B. ED. STUDENTS

Summary for pre-submission

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SUMMARY

1.1.0 INTRODUCTION

The Summary has been provided in detail about this study. This summary is fatal to the description of study in nutshell under caption headings like Rationale, Statement of Problem, Objectives, Hypotheses, Sample, Experimental Design, Tools, Procedure of Data Collection, and Statistical Techniques used for analyzing data, Findings , Implications, and suggestions for further research are included in the summary. The details in respect of each one of them are given in different captions.

1.2.0 RELATIONALE OF THE STUDY

It's been stated that life is one big schooling. It is never too late to learn something new. The required is willingness to learn. Curiosity and desire are the two eyes through which all knowledge can be gained. The ocean of knowledge is huge and unfathomable. Formal education or self-education are both viable options for gaining knowledge. Education can be either liberal or specialized. Geography is a popular subject nowadays. The majority of young people are motivated by lucrative aims. Their main objective is to learn about the world and become aware of the planet's mountains, rivers, and others etc. As a whole, geography is a promising field right now. Almost every human action in today's world is linked to geography. Secondly, geography's associated with various fields. As per the above stated, it is said that geography students have a slightly better vision. The way geography is presented affects how well people grasp it. The technique must be appropriate for the topic in order to learn geography effectively. Only the approach determines whether or not a subject is fascinating and valuable. Self-learning Modules help in the effective presentation of the material for effective teaching.

Albert Einstein said, "I never teach my pupils, I only provide the conditions in which they can learn." Learning is a phenomenon that requires human supervision,

personal attention, and the learners' total efforts. Due to their enhanced capabilities, self-learning modules may prove to be a good for pupils. They play the part of an effective teacher. Because of the rising number of students enrolled and the expansion of knowledge, Self-learning Modules are in high demand. In addition, knowledge gained through Self-learning Modules will help in the development of self-study habits and self-confidence in students, both of which are critical for improving learning.

Geography is a science concerned with the study and description of the earth. It is a branch of Social Studies. It is the study of man's interaction with the earth on which he lives. In today's society, geographic knowledge is becoming increasingly crucial for survival and progress. Especially in the modern world, when expansion is growing at a quicker rate, using environmental resources that are non-renewable in nature, and thereby disrupting the natural balance on the earth. As a result, a variety of changes in the physical and natural components of the world are occurring, which an individual should be aware of. Furthermore, it has been noticed that the majority of Geography teachers prefer to teach Geography using the lecture method. Maps, as well as other audio-visual teaching and learning aids, are not considered required to utilize in classes. In both urban and rural schools, field trips and excursions are less used. This has kept the subject of Geography boring for students in terms of both teaching and learning, making the subject uninteresting and, as a result, low level of students motivation towards the subject geography. There is a significant gap between how geography knowledge is provided to children and how it should be imparted, taking into account the demands of today's technological world, so that children develop an interest and attitude toward learning geography and comprehending the geography of the earth on which they live. All of these things combined to produce a negative attitude about learning this subject. Teachers teaching old concepts and teaching techniques which have fallen behind the times as well as the curriculum reform. It is evident to us that we must actively investigate modern teaching methods i.e. Model. In today's age of technology, where expansion is rising at a quicker rate, there is a pressing need to make significant changes in the way children are taught geography. The current study is an attempt to test an innovative method of technology to improve the teaching learning process of Geography among students utilizing a developed module. With the goal of improving the teaching and learning process of geography, as well as the necessity and

value of modules in geography teaching, and the scarcity of research on the use of self-instructional materials in the classroom, When self-instructional material (Method Of Teaching) is an independent variable and Achievement is a dependent variable, there is scarcity in the research of the interactional effect of many factors such as Intelligence, Personality, study habits, self-confidences, Gender, and Residential. Due to a scarcity of quality teachers, a scarcity of quality instructional material in teaching geography, inconsistency in the conclusions of several investigations on the module, and a small number of researches conducted on the module, the current study is necessary. The current investigation/study was necessary in order to address these issues. In the subject of geography teaching, there is a lack of good professors and good texts. At the B.Ed. and M.Ed. levels, geography is an elective subject. For B.Ed. students and teacher educators, self-instructional material in teaching geography is quite useful. The number of educational colleges in India is expanding all the time, but not enough teachers are being created to meet their needs, resulting in a demand-supply. Self-Instructional Material in geography on B.Ed. syllabus of Kashmir University was developed. Researchers conducted by Mahen (2001), Shukla (2003), Rastogi (2003), Ali (2005), Sameehm (2006), Shehnaz (2006), Laxman, Shinde (2007), Puri (2009), Dubey (2011), Tonke (2011), Ahlawat, Monika (2012), Shukla (2014) and Upasana, Sharma (2016) highlighted that the Self-Learning Modules (SLM) are more effective as compared to conventional mode of teaching. Not only this, the studies of John (2000) Rivet, J.R. (2001), Aggabao (2002), Kavita (2002), Arora & Singh (2005), Bhatt (2012), Ganefri (2013), Sharma, Hitesh (2013), Siddiqui, Naseha (2014) and Islami & Yondri (2016) showed that Self-learning Modules helped to increase the retention of students. Video instructional material on research methodology and statistics was found to be more significant in terms of achievement towards instructional material on research methodology and statistics,however,instructional material on research methodology and statistics was found to be effective to traditional method for teaching research methodology, when groups were matched and without matched with respect to intelligence (Shinde,2007)There was no significant in terms of overall value judgment and overall value clarification of the experimental Group treated with Video Instructional Material (Gupta, 2008). Shukla, 2003) Videography of puppet-show was significant effect on student's video lessons than the Method based on puppet-

show and also girl students in history was found least effective for the achievement while taught through the traditional method (Shehnaz, 2006). (Pillay & Anandan, 1990).The study revealed that programmed filmstrip with teacher has more effective than programmed filmstrip alone. The learning retention was more in the case of programmed filmstrip with teacher in comparison with the conventional method programmed filmstrip without teacher. As per the study, achievement of learning objectives like knowledge, understanding, application and skill were high in case programmed filmstrip with teacher in comparison to other. Dhamija (1985) also found that the student achievement was significantly high when taught through radio-vision approach. The memory of student's knowledge, comprehension and total achievement scores were high in the radio vision group of students who were taught in the subject of geography. Except for one study done by Idayavani (1991) establishing a video programme in Physical Geography for secondary students, the researcher reviewed that there is no studies in India for the developed modules in teaching of Geography at the higher level. Only one study has been found by the researcher, and it will help in understanding the field of teaching Geography through produced modules. One function of teaching of geography, according to D. Forsaith's excellent handbook for geography instructors, is to assist the students adjust to the world as a whole through enlightened pictures of different peoples and races, resulting in a sound and just international feeling. The use of developed modules in Geography teaching can improve the vitality of Geography teaching and promote overall student development in an effective way by creating teaching situations, student interest in learning, cultivating noble character, and creating a good moral character, increasing classroom capacity, the development of intelligent students to develop their comprehensive ability, and contributing to improve the vitality of Geography teaching. Higher education is the most important education that one can have in order to be prepared for a successful career.

According to the review, Various training programmes and instructional approaches were established by various researchers to develop self-instructional material,. Also, different types of moderate variables are utilised by different researchers, and they differ in terms of methodology, sample size, age, duration, rural as well as urban, grades and categories, and so on. However, in order to investigate the usefulness of the module and the students' reactions, the researchers used moderate characteristics such as gender,

residential background, personality, IQ, study habits, and self-confidence. It is clear from the above-mentioned created module research that very little research has been done in this area. In comparison to higher education, less work has been done with primary and secondary pupils. As a result, there is a need to provide geography educational materials for B.Ed. students. In India, the development of Self-learning Modules is still in its early stages, with the majority of researchers developing Self-learning Modules and demonstrating its usefulness for school children. SLMs for higher education have been developed by a small number of scholars. The current project is being undertaken in order to determine the effectiveness of SLMs in higher education. If pupils are given Self-learning Modules for self-study purposes, they can progress better in achievement of desired LEARNINGS. Thus, there is a need to give-new dimension to the field of education to develop few alternate self-learning modules which will suit to the individual intelligences, study habits and study the effects of other variables. There were only few research has been developed in the field of self-learning modules to determine their effectiveness at the higher education .This study is an effort to develop self-learning module in teaching of geography for B.Ed. students and to know their effectiveness on teaching of geography as related to intelligences, personality, study habits and self-confidences.

1.3.0 STATEMENT OF THE PROBLEM:

Statement of the problem are as follows:

"Effectiveness of module on teaching of geography in terms of achievement and reaction of b. Ed. Students"

1.4.0 OBJECTIVES OF THE STUDY

Following objectives are formulated below:

1. To compare adjusted mean scores of achievement in geography of students belonging to treatment group and traditional method group by considering pre achievement in geography and intelligence as covariate.

2. To study the effect of treatment, gender and their interaction on achievement in Geography by considering pre achievement in Geography and intelligence as covariate

3. To study the effect of treatment, intelligence and their interactions on achievement in Geography by considering pre achievement in Geography as covariate.

4. To study the effect of treatment, personality and their interaction on achievement in Geography by considering pre achievement in Geography as covariate.

5. To study the effect of treatment, study habits and their interaction on achievement in Geography by considering pre achievement in geography as covariate

6. To study the effect of treatment, self-confidence and their interaction on achievement in Geography by considering pre achievement in Geography as covariate

7. To study the effect of treatment, residential background and their interaction on achievement in Geography by considering pre achievement in geography as covariate

8. To study the reaction of students belonging to treatment group towards module on teaching of geography of B. Ed. Students.

1.5.0 HYPOTHESES OF THE STUDY

Following Hypotheses are formulated below:

1. There will be no significant difference between adjusted mean scores of achievement in geography of students belonging to treatment group and traditional method group by considering pre achievement in geography and intelligence as covariate

2. There will be no significant effect of treatment, gender and their interaction on achievement in Geography by considering pre achievement in Geography and intelligence as covariate.

3. There will be no significant effect of treatment, intelligence and their interactions on achievement in Geography by considering pre achievement in Geography as covariate.

4. There will be no significant effect of treatment, personality and their interaction on achievement in Geography by considering pre achievement in Geography as covariate.

5. There will be no significant effect of treatment, study habits and their interaction on achievement in Geography by considering pre achievement in geography as covariate.

6. There will be no significant effect of treatment self-confidence and their interaction on achievement in Geography by considering pre achievement in Geography as covariate.

7. There will be no significant effect of treatment, residential background and their interaction on achievement in Geography by considering pre achievement in geography as covariate.

8. There will be no significant reaction of students belonging to treatment group towards module on teaching of geography of B. Ed. Students.

1.6.0   SAMPLE

The present study was Experimental in nature and conducted in two B.Ed. educational institutions, namely, MTM College of Education & Green Valley College of Education, University Kashmir in India. The sample comprised of 60 students studying at B.Ed. level in the above-mentioned institutions. The College-wise distribution of students is given in Table 1.6

Table 1.6: Collage wise Distribution of subjects

S.NO.	Name of Collages	Year	Day/Months	Male	Female	Total
1	MTM College of Education	2020-21	Monday/Thursday, Sept. to Nov.(21)	14	19	33
2	Green Valley College of	2020-21	Saturday/Tuesday, Nov. to. (21)	11	16	27

|		……	…………….			
	Education					
	Total	……	…………….	25	35	60

From Table 1.6, it is observed that the 33 subjects were from the MTM College of Education, Kashmir. The subjects of MTM College of Education were 14 males and 19 females who belonged to the 2020-21 academic session. The experiment was conducted in Kashmir valley. So subjects from the MTM College of Education were in the Experimental Group. While 27 subjects were from Green Valley College of Education were 11 Male and 16 Females belonged to the same academic session. The subjects from Green Valley College of Education have constituted the Control Group. The medium of instruction of both the collages was English and Urdu. The subjects belonged to high, average and, below the average of both groups. Subjects were from both Urban as well as rural areas and belonged to other castes.

1.7.0 DESIGN

The present study was experimental in nature. In order to compare the effectiveness of two methods of teaching (i.e. Self-learning Modules and Conventional mode of teaching), the pre-test-post-test-control group experimental design was used. One group was designated as the Experimental Group and the other as the Control Group. The students were taken as fatal in two B.Ed. collages.

1.7.1 EXPERIMENTAL DESIGN

In the present study, the non-Equivalent pre-test posttest Control Group Design (Campbell and stanely1963) was used. The experimental group was exposed to the independent variable i.e. treatment and both groups will test at pre and post-test stages by the same criterion test in geography, scores were then compared to the effectiveness of the treatment

$$O \quad X \quad O$$

-------------------------------   (Campbell and stanely1963)

$$O \qquad O$$
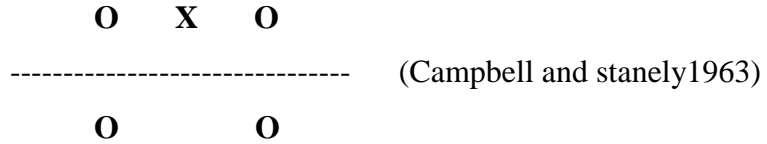
Where X = Treatment

……….. =   Non equivalence

O = Observation

In it, one group received self-instructional material and the other receives a traditional method, both groups were tested at pre and post-tests stages. Both groups were comparison groups. (X)Group was taught by module and the other was taught through the traditional method. The post-test achievements of both the groups were compared by considering their pre-test achievement in geography as a covariate

There were two groups. One group was designated as the Experimental Group and the other as the Control Group. The students were taken from two B.Ed. collages. In the experimental group, self-Instructional Material on Geography was given to the Experiment Group in the form of a booklet. The developed module was prepared only on three units of Geography. The three units were divided into seven modules. The sub-topics were Introduction to Geography, Concept of Soil, Effect of Earthquakes, Composition of Atmosphere, Physical features of India, Population and distribution of Growth, and Features of the Indian climate. In all 20 Lectures on 'Teaching of Geography' were given. The topic-wise number of lectures is given in the following Table 1.7.1.

S.NO.	Topics	Number of Lectures
1	Introduction and concept of Geography	2
2	Concept of soil and its types	2
3	Effect of Earthquakes	2
4	Structure and Composition of Atmosphere	3
5	Physical features of India	2
6	Population and distribution of Growth	3
7	Features of the Indian climate	3
Total	7 Module	18

Each lecture was of 30 to 40 minutes. Only one lecture per day and for two/three days a week was given to all students of the Experimental Group. The students of the Experimental Group while taking Self-learning material each and everything has been discussed about the particular topic. The students of the Experimental Group were allowed to discuss and ask questions after reading each module. The experimental group of students took one week to read the concept of geography through SLM. After reading module I, the Experimental Group of students went through the SLM on the soil and its types. The experimental group of Students took one week to complete this topic. After reading module II, students studied the SLM on the Effects of Earthquakes. There were two lectures and students took one week to complete it, after reading module III, an Experimental Group of students studied the Structure and Composition of Atmosphere through SLM. There were three lectures on the Composition of Atmosphere. Students took one week to complete this topic through SLM. On its' completion, After Reading the module VI, an Experimental Group of students went through the SLM on Physical features of India. The experimental group of Students took one week to complete this topic. After Reading the module V, students studied the SLM on Population and distribution of Growth. There were three lectures and students took one week to complete it, after reading the module VI, an Experimental Group of seasons/Monsoon of Indian through SLM. There were three lectures on seasons/Monsoon of Indian. Students took one week to complete this module through SLM. On its' completion, Thus, the treatment continued for 7 weeks. This part of the experiment was conducted during the 2020 – 21 academic session in the month of Sept. to Nov. MTM College in Tangmarg, Jammu & Kashmir Affiliated with Kashmir University. This was repeated in the same way during the 2020 – 21 academic session in the month of Sept. to Nov. in the Green valley college of Education Barzula, Jammu & Kashmir Affiliated with Kashmir University. The same topics were taught to the Control Group using the Lecture Method. The students of the Control Group were from Green valley college of Education. In Green valley college of Education, the same topics were taught Saturday & Tuesday. As when the Concept of Geography, soil and its types, Effects of the earthquake, Structure, and composition of the Atmosphere, the physical feature of India, population, and Distribution of growth, Seasons/Monson was completed then the Criterion Test was administered after the completion of all modules. Administering the

standardized tools as mentioned under tools collected the data in respect of Intelligence, Personality, Study habits &Self-confidences of both Experimental as well as Control Groups as an when the time was available. The Reaction towards SLM was assessed only of Experimental Group with the help of the Reaction towards SLM Scale developed by the researcher. This Scale was administered after the completion of all Modules.

1.8.0 TOOL USED

In the present study data were collected in respect of variables, like, Intelligence, Personality, Study Habits and self-confidences by administering the standardized tools. Apart from these, the achievement in teaching of Geography and Reaction towards Developed Module were assessed with the help of expert developed by the investigator. The details regarding the tools used for assessing these variables are given below in different captions.

The sub description which were used during the whole study are given as bellow in table 1.8

Tool	Developed by	Status	Items	Validity	Reliability
Verbal Intelligence test	Ravens Progressive Matrices(2005)	Standardized	60	..	0
Personality Inventory	H. J. Eysenck(1985)	Standardized	48	..	0.42
Study Habits scale	Mukhopadhyaya & Sansanwal(2002)	Standardized	52	..	0.91
Self Confidence scale	Agnihotri's Self-Confidence Inventory (ASCI,	Standardized	56	0.82	0.78

	1987).				
Achievement Test in Geography	Researcher	Self-developed	60	Not Established	Not Established
Reaction scale	Researcher	Self-developed	30	Not Established	Not Established

1.8.1   Intelligence:

Intelligence as a concept has been understood in different ways by different psychologists. According to Stern (1914), "Intelligence is the general capacity of an individual consciously to adjust his thinking to new environments. It is the general mental adaptability to new problems and conditions of life." According to Bagnon (1937) - "Intelligence is the capacity to learn and adjust to relatively new and changing conditions." Intelligence tests both verbal and non-verbal have been developed and standardized by different researchers for different age levels. Intelligence by Raven's Standard Progressive Matrices (2005). This test for the target group belonging to age of 6 years to 65, medium of test is non-verbal. this test deals with mental ability problems, it can be used for, individual or group ,there are 60 items in the test and have been divided on five sets, A, B, C, D and F, as per manual, the split half reliability coefficient was 0.90.This reliability coefficient was established by administering the test to the graduate and postgraduate students.

1.8.2   Personality:

The term Personality is derived from the Latin word Persona which means mask. According to All port (1948) - "Personality is a dynamic organization within the individual of those psychophysical systems that determine his unique adjustment to his environment." Eyesenck (1972) gave three basic dimensions of Personality. 1. Introversion-Extroversion 2. Neuroticism (Emotional instability – Emotional stability) 3. Psychoticism. In this study researcher had considered Introversion Extroversion Personality of students. Personality of

the students was assessed with the help of HJ.Eysenckfs M.P.L (1972) and later adapted by Jalota and Kapoor for Indian population in Hindi and Punjabi language. The MPI was designed for assessing neuroticism, stability and introversion extroversion dimensions of the Personality. This inventory can be used for a group or an individual for both adolescents and adults. There was no time limit but the subjects usually took 20 minutes to respond. The inventory consisted of 48 items. Against each item, three choices were given, namely "Yes", "?" and "NO". The student had to read the statement and select any one choice. The scoring was done as per the instructions given in the manual. The split-half reliability coefficient for Extroversion- Introversion was 0.42. It had content validity.

1.8.3   Study Habits:

According to Good (1959): Study Habits are, (i) the tendency of a student to study when the opportunity is given. (ii) The student's way of studying, whether systematic or unsystematic, efficient or inefficient etc. For the assessment of Study Habits of students Study Habits Inventory developed by Mukhopadhyaya and Sansanwal (1983) was used. This inventory consisted of 9 different kinds of study behaviour. These were comprehension, concentration, task orientation, sets, interaction, drilling, supports, recording and language. The test contained both positive and negative items. Total number of items was 52. The scoring procedure was 4, 3, 2, 1, and 0 for positive items while 0, 1, 2, 3, 4 for negative items. The reliability of the whole inventory was worked out by using Split Half Method. The reliability coefficient was 0.91.

1.8.4   Self Confidence:

According to good (1973) "Self-confidence refers to faith in one's own ability" which enables the individual to be dependable on himself, to rely upon his own judgment, not to be submissive and to feel himself adequate to do the things, he wants to do. It overcomes all the barriers and develops the ability to tackle even tough situations successfully without depending on others and to have a positive self-evaluation. Self Confidence tests have been developed and standardized by different researchers for different age groups. Bhawallkar (1992) developed Self Confidence scale and the test-retest reliability was found to be 0.464 which was significant, but not of a very higher level. The test was developed for the age group of 14 to 16 years. Sharma (1992) conducted a study using Bhawalkar's Self Confidence scale on a sample whose age ranged from 12 to

14 years. In the present study self-confidence of both the groups i.e. experimental and control belonging to B.Ed. students was assessed with the help of Agnihotri's Self-Confidence Inventory (ASCI, 1987). Agnihotri's Self Confidence Inventory (ASCI) comprised of 56 statements. Each statement was followed by two alternatives. The students were required to choose one from the given alternatives which best described their position. The inventory is self-administering in nature. There is no time limit. Ordinarily an individual takes 20 minutes to complete the inventory. The students were requested not to leave any item unattempt. A score of one was awarded for a response indicative of lack of Self-confidence, i.e. for making cross (x) to wrong response to item numbers 2, 7, 23,31,40, 41 , 43, 44,45, 53,54, 55 and for making cross (x) to right response to the rest of the items. Hence, the lower the score, the higher would be the level of Self-confidence and vice-versa. The split-half reliability of the test was found to be .91 and test-retest reliability was found to be 0.78, which is significant at 0.01 level. Thus, the verbal measure of Self-confidence used in present investigation was considered to be reliable. The inventory was also validated by correlating the scores obtained on this inventory with the scores obtained by the subject on Basavanna's (1975) Self-Confidence Inventory. The validity coefficient obtained is .82, which is significantly beyond .01 level.

1.8.5   Reaction Scale

The Reaction Scale was developed by the investigator for assessing the reactions of students of experimental group towards developed Material. The scale comprised of 30 statements which were to be rated and scored. The various aspects reflected in the statements were teaching skill, self-expression, clarity of thought, self-learning material, sequencing of learning material, self-confidence, need, interest etc. A point reaction scale has been developed to the reaction of the students through were supposed to show their reaction by putting a tick mark (√) in the appropriate box for each statement. The five points were, AS (Stong Agree),A(Agree),CS(Can't Say)DA(Disagree),and SDA(Strong Disagree) The students were asked to read each statement carefully. There was no fixed time for giving the responses, but the students were asked to complete fast and not to spend more time on each statement. All the statements framed were positive. The weightage assigned for positive statements was 5, 4, 3, 2, and 1 respectively. For validation, the

reaction scale was given to some experts having proficiency in educational tools for their suggestions and accordingly their suggestions were duly incorporated in the reaction scale.

1.8.6 ACHIEVEMENT TEST

The researcher constructed achievement test with the purpose to conduct pre-test and post –test as a part of experiment. The attainment of intended goals or terminal behaviour is the only way for any teaching to succeed. So, at the conclusion of the instructional work, an evaluation was required to ensure that the pupils had achieved the terminal behaviour. Its objectives is to determine how many objectives were achieved rather than to discriminate between high and low achievers. As a result, the researcher receives feedback, which helps in the revision of the Instructional Material. The achievement test constituted of questions that covered the material of units 1 to unite 4 of textbook teaching of Geography for B.Ed. level, which was developed by the University of Kashmir in 2015, reprinted in January 2019, recommended by UGC for syllabus execution. The researcher putout the blue print for the construction of the achievement test in Geography taking into consideration the type and level of questions. The blue print was of 48 multiple choice questions as well as 12 short answer questions based on appropriate exposure of the content from all seven modules and with coverage to knowledge, understanding and application levels questions. While keeping the blue print under consideration, the achievement test in Geography was constructed by the researcher. The constructed achievement test was shown to the some experts like Professors, Teachers in the field of Geography as well as other subject masters for the purpose of its validation. The suggestions of the experts were duly incorporated in the Geography achievement test and then one achievement test was prepared.

1.9.0 PROCEDURE OF DATA COLLECTION

This research was conducted MTM Collage of Education &Green Valley of Education, Kashmir university, Srinagar on B.Ed. students during the academic sessions 2020-21. After taking the permission from the higher authorities of the collages, after got permission the students of said B.Ed. collages of Education were oriented for the present study. Than students of above collages were supposed to use the SLM on Teaching of

Geography. Each lecture was of 30 to 40 minutes. Only one lecture per day and for two/three days a week was given to all students of Experimental Group. The students of Experimental Group while taken Self-learning material each and everything has been discussed about the particular topic. The students of Experimental Group were allowed to discuss and ask questions after reading the first topic. Experimental Group of students took one week to read Introduction of Geography. After Reading the Introduction of Geography, Experimental Group of students went through the SLM on Concept of Soil. Experimental Group of Students took one week to complete this topic. Students studied the SLM on Effects of Earthquakes. There were two lectures and students took one weeks to complete it, after reading the Effects of Earthquakes, Experimental Group of students studied Composition of Atmosphere through SLM. There were three lectures on Composition of Atmosphere. Students took one week to complete this topic through SLM .After Reading Composition of Atmosphere, Experimental Group of students went through the SLM on Physical features of India. Experimental Group of Students took one week to complete this topic. Students studied the SLM on Population and distribution of Growth. There were three lectures and students took one week to complete it after reading the Composition of Atmosphere, Experimental Group of students studied Features of Indian climate through SLM. There were three lectures on Features of Indian climate. Students took one week to complete this topic through SLM. On its' completion, Criterion Test was administered and students took 60 minutes to complete the test. Thus, the treatment continued for 7 weeks. This part of experiment was conducted during 2020 – 21 academic session in the month of Sept. to Nov. MTM College in Tangmarg, Jammu & Kashmir Affiliated with Kashmir University. This was repeated in the same way during 2020 – 21 academic session in the month of Sept. to Nov. in the Green valley college of Education Barzula, Jammu & Kashmir Affiliated with Kashmir University. The same topics were taught to the Control Group using Lecture Method. The students of Control Group were from Green valley college of Education. In Green valley college of Education, Same topic were taught Saturday & Tuesday. Similarly, the Criterion Test on the students of respective collage was also done after the completion of the respective topics. Administering the standardized tools as mentioned under tools collected the data in respect of Intelligence, Personality, Study habits &Self-confidences of both Experimental as well as Control Groups as an when

time was available. The tools mentioned above in the same chapter VI were used to assessing variables like Intelligence, Personality, Study habits &Self-confidences. The Reaction towards SLM was assessed only of Experimental Group with the help of Reaction towards SLM Scale developed by the researcher. This Scale was administered after the completion of all the four unites of seven Modules. These two groups were matched on the basis of scores achieved by students on the Ravens Intelligence Test. Students were tested on two testing occasions to compare the effect of Self-learning Module and Conventional Mode of Teaching on the achievement . Accordingly scoring of all the tools were got as per scoring given in the respective manual.

1.10.0 STATISTICAL TECHNIQUES

The statistical techniques used as per objective-wise are given below:

1) One way analysis of covariance(ANCOVA)was used to study for comparing adjusted mean scores of Achievement in Geography of students belonging to treatment group and traditional group by considering pre achievement in Geography and intelligence as covariate

2) 2x2 Factorial design (ANCOVA) was used to study the effect of treatment, Gender and their interaction on achievement in Geography by B.Ed. considering pre achievement in Geography and intelligence as covariate.

3) 2x2 factorial design (ANCOVA) was used to study the effect of treatment, intelligence and their interactions on achievement in Geography by considering pre achievement in geography as covariate.

4) 2x3 Factorial design (ANCOVA) was used to study the effect of treatment, personality and their interaction on achievement in Geography by considering pre achievement in Geography as covariate.

5) 2x3 factorial design (ANCOVA) was used to study the effect of treatment, study habits and their interactions on achievement in Geography by considering pre achievement in geography as covariate.

6) 2x3 factorial design (ANCOVA) was used to study the effect of treatment, self-confidence and their interactions on achievement in Geography by considering pre achievement in geography as covariate.

7) 2x2 Factorial design (ANCOVA) was used to study the effect of treatment, residential background and their interaction on achievement in Geography by considering pre achievement in Geography as covariate.

8) Mean, percentage, standard deviation and coefficient of relation was used to study reactions of students belonging to treatment group towards developed module on teaching of geography for B.Ed. students.

1.11.0   FINDINGS

The followings were the findings of the experimental study:

1.   The adjusted mean scores of Achievement in geography of students belonging to the treatment group was found to be significantly superior than traditional method group when the groups were matched with respect to Pre-achievement and Intelligence as covariates.

2.   The adjusted mean scores of Achievement in Geography of male and female students did not differ significantly when the groups were matched with respect to Pre Achievement and Intelligence as covariates.

3.   The adjusted mean scores of Achievement in Geography of students was found to be independent of interaction between Treatment and Gender when the groups were matched with respect to pre achievement and intelligence as covariates.

4.   The adjusted mean scores of Achievement in Geography of high and low intelligence students did not differ significantly when the groups were matched with respect to Pre Achievement as covariate.

5.   The adjusted mean scores of Achievement in Geography of students was found to be independent of interaction between Treatment and intelligence when the groups were matched with respect to pre achievement as covariate.

6.   The adjusted mean scores of Achievement in Geography of introvert, ambivert and extrovert students did not differ significantly when the groups were matched with respect to Pre Achievement as covariate.

7.   The adjusted mean scores of Achievement in Geography of students was found to be independent of interaction between Treatment and personality when the groups were matched with respect to pre achievement as covariate.

8. The adjusted mean scores of Achievement in Geography of high, average and low study habits of students did not differ significantly when the groups were matched with respect to Pre Achievement as covariate.

9. The adjusted mean scores of Achievement in Geography of students was found to be independent of interaction between Treatment and levels of study habits when the groups were matched with respect to pre achievement as covariate.

10. The adjusted mean scores of Achievement in Geography of high, average and low self-confidence of students did not differ significantly when the groups were matched with respect to Pre Achievement as covariate.

11. The adjusted mean scores of Achievement in Geography of students was found to be independent of interaction between Treatment and levels of self-confidence when the groups were matched with respect to pre achievement as covariate.

12. The adjusted mean scores of Achievement in Geography of urban students was found to be superior to rural students when the groups were matched with respect to Pre Achievement as covariate.

13. The adjusted mean scores of Achievement in Geography of students was found to be independent of interaction between Treatment and residential background of students when the groups were matched with respect to pre achievement as covariate.

14. The Reaction of Students belonging to treatment Group towards Developed module in Geography of B.Ed. students was found to be very effective.

1.12.0 IMPLICATIONS

Present study has wide implication for the person working in the field of education. The present study revealed that the developed module on Geography was found to enhance the understanding of teaching of Geography of B. Ed. It provides guidelines Module Developers, Students, Teachers, Principals, Parents, Educational Planners, Curriculum Developers, Distance and open learning students, and Researchers. These are given in different captions in detail.

1.12.1 Module Developers

We know that module is one type of self-study material designed to help learners to achieve pre-determined objectives. In modular approach, the learners or students are free to learn according to their interest and progress at his own pace. But there are various types of students present in the classroom e.g. some of the students may be creative some of them may be bright, average and below average or may be extroverts and introverts, but all the students have to follow the same path this makes classroom or learning activities monotonous and it creates boredom for the different types of students. So, there must be some change by which the students become an active learners and we may say that developed module in this situation is new innovation in the field of education. By using developed module the modular approach can be made more effective and interesting. Due to this, new techniques in module development is needed. Keeping in mind all these it is suggested that all module developer should learn about developed module, undergo a small training. The Module developed for the present study can provide guidelines to the module developers.

1.12.2 Students

Teaching of geography is an optional subject at B.Ed. as well as M.Ed. Level. In teaching of Geography at B.Ed. Level students could not score high marks due to scarcity of quality books in English medium and quality teachers in their institute. Hence developed module on geography is an English medium and the technical words are given in an English medium is modern technique for students as well as teachers.The students can use this material at their own pace at any place and time they like, thus, the developed module on Geography can be very useful for students. Developed module can be used as self-instructional material to study Geography. Students can also learn even in absence of teacher.

1.12.3 Teacher Educators

The role of a teacher in the society is very important which prepared the future citizens. The teacher educators train future teachers in pedagogy and methodology of teaching. Innovations in the field of education are happening day to day. There is a need to acquaint teacher educators with latest techniques and innovations of education. Keeping this point in view the present study has tried to give a new approach to learning process. Teachers can also use SLM along with classroom teaching. It is fact that the

expansion of Teacher Education in India is unplanned. In the past few years large number of colleges of Teacher Education has come up in all the states. In most of these private educational colleges faculty staff is incomplete in real condition. There is scarcity of Teacher Educators at B.Ed. as well as M.Ed. level. In many colleges books and other instructional material on Geography is not available. The teachers can use this material at their own pace as many times as they like and they can go a long way in improving the quality of Geography teaching. Developed Module can be used for training of teacher trainees.

1.12.4 Principal/Administrator

Principal/Administrator of an institution can provide more facilities to their students by keeping the Developed Module in library. Principal can motivate the subject teachers to develop Module of different subjects under different topics. For this he might organize proper teacher training program to upgrade and up to date knowledge of various innovations which has been done in the area of education through organizing workshops, seminars and refresher courses etc. Not only this but he or she should also see that it is being used by teacher and students. Principals can use SLM in providing training to teacher trainees and also in engaging class in absence of teacher.

1.12.5 Parents

Parents are the most important part of society who always remain in close contact to their child. So they will play an important role in providing learning material to them. For this it is necessary that parents must know the importance of Module. Parents are supposed to provide books and other study material to their child for study. Many times it was found that students do not get good marks because the understanding of basic concepts is too weak. This is usually due to unavailability of quality books and quality teachers. Parents should vigilant in selecting quality study material for their child. Parents should select developed module for their child to improve achievement in Geography.

1.12.6 Educational Planners

Developed Module on Geography was found effective in terms of Achievement and Reaction of students towards it, hence, Members of Planning Commission, Department of Higher Education, University Grants Commission, Consortium for Educational Communication, National Council for Teacher Education and different

universities should make systematic planning for development and use of developed module in different subjects. The planning agencies should also provide funds for development of quality developed module in different subjects. Developed Module can be uploaded on website so that large number of students can use it. Then only 'Learning at Doorstep' and 'Reaching to the Unreached' will become possible.

1.12.7 Curriculum Designers

As it is evident that society is every changing. Thus the demands are also changing which also affect the system of education. Along with books and other study material curriculum developers may develop Module and may keep it in curriculum. The curriculum designers should plan and implement curriculum accordingly the latest demands of the modern society like innovative techniques (CBT, Programmed learning, modular approach etc. Developed module was found effective in enhancing achievement of student. Thus developed module will suit to the present demands of the modern society. Hence when it will be kept in mind while framing curriculum; student's achievement will be definitely improved.

1.12.8 Distance and Open Learning Universities

In open universities student learn with the help of instructional material provided by the university. Many times students found difficulties in studying with this material. Developed Module should be used with this material to enhance comprehension and achievement of students. Developed Module can also be making available to students with the help of internet and educational television.

1.12.9 Researchers

Researchers should develop Module on other subjects and should also study its effectiveness. Researchers can also develop and study effectiveness of developed Module for Higher Education, Higher Secondary, Secondary, Primary and Pre Primary students. Researchers can develop Module with modern 3D effects and animations. Interactive developed Module can also be developed by researchers and its effectiveness may be study.

1.13.0 SUGGESTIONS FOR FURTHER RESEARCHES.

1. Only three units from Geography were taught through Instructional Material. A research may be conducted where in full course of geography may be taught through the use of the designed Instructional Material/Module.

2. In the present study Geography was taught through Module. The other subjects may also be taught efficiently by developing module on teaching.

3. In the present study effectiveness of each component was studied in terms of reactions of students.

4. Developed Module on Geography can be developed at different levels as primary, high school, higher secondary and college level.

5. Different facilities in the Module can be incorporated to make the teaching-learning process effective and interesting.

6. Effectiveness of Module can be increased with the use of different variables.

7. There is a need to develop Modules in different languages especially Hindi and English as well.

8. In the present study developed Module was developed in English Language. The researchers may develop Instructional Material in other languages also.

9. An experimental study may be undertaken to explore the attitude of students, teachers, school authorities and curriculum makers towards the instruction of the teaching and learning through Developed Module.