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# EFFECTIVENESS OF SYSTEM APPROACH AND COMPUTER BASED EVALUATION UPON ACHIEVEMENT IN GEOGRAPHY OF STUDENTS OF X STANDARD

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**Abstract**

*Educational Technology is an applied study which aims at maximizing learning by making use of scientific and technological method and concepts developed in other social service. The most exciting innovation in the educational technology is SYSTEM APPROACH The characteristic aspect of the SYSTEM APPROACH is its capacity to initiate flexible interactions with the student which is not possible in the teaching machine. There are a number of ways in which this can be brought about. The study is conceived with the effectiveness of system approach in Teaching of Geography. The sample is constituted by IX standard students. The result reveals that there is significant difference between the performance*

## Introduction

### Educational Technology

Educational Technology is the process of utilizing all available knowledge regarding human learning and communication for improving teaching and learning using human and non-human resources.

"Educational technology is both technology in education and technology of education"." Educational technology is a systematic and scientific way of developing tools and techniques to improve the process of teaching learning."

Collier stated that Educational Technology is concerned with the design and evaluation of curriculum and learning experiences and with the problem of implementing and renovating them. Essentially it is a rational problem solving approach to education, a way of thinking systematically about learning and teaching.

Educational Technology is an applied study which aims at maximizing learning by making use of scientific and technological method and concepts developed in other social science.

### System Approach

The most exciting innovation in the educational technology is SYSTEM APPROACH. A characteristic aspect of the SYSTEM APPROACH is its capacity to initiate flexible interactions with the student which is not possible in the teaching machine. There are a number of ways in which this can be brought about.

**Components of an instructional System**

Systems approach is a systematic attempt to coordinate all aspects of a problem toward specific objectives. In education, this means planned and organized use of all available learning resources, including audio-visual media, to achieve the desirable learning objectives by the most efficient means possible. The systems approach focuses first upon the learner and the performances required of him. Only then it makes decisions regarding course content, learning experiences and the most effective media and instructional strategies. Such a system incorporates within itself the capability of providing continuous self-correction and improvement. It is concerned with all elements of instruction including media. Its purpose is to ensure that the components of the organic whole will be available with the proper characteristics at the proper time to contribute to the total system fulfilling the objectives.

The procedural steps in the systems approach in education are as follows.

1. Defining instructional goals, behavioural objectives and stating them in operational, measurable terms.
2. Determining functions related to the achievements of these goals by proper aids like films, recordings, videotapes, etc.
3. Defining learner characteristics and requirements.
4. Choosing appropriate methods suitable for effective learning of the topic.
5. Selecting appropriate learning experiences from many alternatives available
6. Selecting appropriate materials, facilities, equipment, resources, environment and tools required for student experiences.
7. Defining and assigning appropriate personal roles-teachers-team teaching members-supporting personal students.
8. Implementing the programme-test with a few pupils in typical and appropriate condition.
9. Testing and evaluating the outcome in terms of original objectives measured in student performance.
10. Refining and revising if necessary to improve production and efficiency of the system to improve student learning.

In an instructional system, the teacher or instructor and the resources made use of by him are included as components of the system. There is provision for continuous evaluation and self correction, for realizing the stated objectives. In the systems approach to instruction, the teachers has to plan completely the utilization of selected resource material and the classroom activities (each pupil working alone, small groups of pupils. 4 to 6 working alone or with teacher guidance, large groups working alone, very large groups requiring the work of mass communication media). The teacher should have a good overall view of the subject, know his/her limitations, know all about his/her pupils and the

individual differences in their learning capacities and plan accordingly. The systems approach involves continuous evaluation of learning outcomes and utilization of knowledge gained by analysis of results of evaluation to suitably modify the plan of approach to achieve the stated objectives.

**Significance of the Study**

For modernization and quality improvement of education there are various fronts on which action has to be taken immediately in a planned and co-ordinate manner. One important form is the provision of effective instructional materials and methods for classroom instruction. Therefore it was considered that there is a genuine need and a wide scope to conduct detailed studies in this area. The present study is an attempt to develop self-instructional materials in certain units in Geography for X standard students and study the study effect of the programmed Instruction and Computer Assisted Instruction as supportive strategy reinforcement.

Recognizing differences and the ability to work with individual student's are the main components of teaching. Teachers who take into account student's individual learning styles constantly strive to introduce concepts by using a variety of methods. Each student's abilities and strengths should be used to enrich a curriculum. When introducing a concept, it is best to prepare as many different methods as possible (Slavin, 1986). This view also highlights the importance of a shift from conventional method of teaching to modern methods of teaching.

The heavy curriculum load at the School Level (X std) compels teachers to cover the courses in a hurry. Teachers often stick to cover more content in a short time and as consequence many planned objectives of the higher order cognitive domain remain to be achieved. The concentration is dispensing of knowledge to the students rather than in finding out if the students have comprehended what the teacher has tried to pass on to them. As the teachers are not getting enough time to identify the individual differences in the class, the slow learners and the under achievers are much affected and may be held back from mastering the subject taught. Students in the class are geared to the loading of factual knowledge as sufficient opportunity could not be given for developing intellectual skills and enhancing the critical thinking, reasoning and problem-solving ability. Revision of the lessons also could not be done in the class due to time shortage and in turn it affects the retention (remembering) of facts and concepts. Hence we have to search for supplementary or complimentary teaching-learning strategies which will enable the teacher to cover content in a short time more effectively.

Computer Assisted Instruction is gearing up as a powerful instructional aid in the teaching learning process. In India, only few researches have been done in the field of Computer Assisted Instruction. It is also mainly confined to the use of System approach as an alternative strategy to conventional method of teaching. Now attempts are to be made

to see the effectiveness of system approach as a supportive system in teaching Geography at the School Level. In our country, there is a severe shortage of suitable Computer assisted instructions in branching style as well as computer Assisted Instructional software on certain units in 'Geography' Hence, Computer Assisted materials should be developed and studied.

**Research Questions**

The investigation was carried out with a view to finding out the answers to the following questions

1. What is the level of Achievement in Geography of the students of the X standard
2. How far is the Computer Assisted instruction and Evaluation Effective in teaching of Geography

**Objectives of the study**

i) To study the effectiveness of Computer assisted instruction upon teaching of Geography at school level.
ii) To find out the extent of achievement in Geography of the students of Standard X.
iii) To develop Computer assisted instruction module for teaching of Geography at Higher school level.

**Hypotheses**

1. There will be no significant difference in the mean scores of achievement in Geography in the pre-test between control group and experimental group.
2. There will be no significant difference in the mean scores in achievement in Geography between the pre-test and Post-test for the control group.
3. There will be no significant difference in the mean scores of Achievement in Geography between the pre-test and Post-test for the experimental group
4. There will be no significant difference in the mean scores of Achievement in Geography for the Post-test between control group and experimental group.
5. Gap closures in experimental groups will be greater than that of control group.

The students were selected randomly for the sample.

**Experimental Design**

The major objective of the present investigation is to study and compare the System approach as an effective reinforcement strategies in teaching-learning process and its effect on achievement of in Geography among the selected Higher Secondary School students and this demands to employ one of the experimental designs. There are three types of experimental methods which are widely in use. They are (1) Pure experimental method (2) Quasi-experimental method and (3) Ex post facto experimental method. In pure

experimental and control groups are necessary. This method could not be used for the present study, since perfect matching of the subjects is not possible in the natural classroom situations. The ex-post facto design is generally used to see the effect of naturally occurring events which are not under the control of the researcher. In quasi-experimental method the researcher has full control over the independent variables to be manipulated and could see the effectiveness of the treatment variable on human behavior. Further, the quasi-experimental design does not require randomization and perfect matching of all the variables which affect the dependent variables.

Considering the major objectives of the study and pre conditions of experimental research designs, the investigator has adopted the quasi-experimental design for the present study.

**Development of Computer Assisted Modules**

**Development of frames**

After sequential arrangement of the content on 'Geography' under five modules, writing of the programme was taken up. At this stage special care was taken to follow all the basic principles of programming in branching style. The instructional materials of each module are divided and presented in the form of Main frames which are followed by multiple choice list items. Branching frames are given separately as sub frames. In the main frames new concepts are introduced. Followed by each main frame, a multiple-choice question is given. The learner has to discriminate and choose one right answer. The correctness of his response and the directions are given in sub frames. The learner could move forward to the next main frame, if his answer is correct, but is asked to go to the sub frame (remedial frames) if he does not. These sub frames explain the subject matter afresh, reveal his mistakes, ask him to go through the previous main frame once again or attempt the question once again and then forwarded to the next main frame. The sub frames of a main frame are distributed in different pages. Special care is taken to avoid the presentation of two sub frames of a main frame or a main frame and its sub frame in the same page. Definitions, new terms used etc. are either underlined or typed in bold letters. Examples and diagrams are used at appropriate place and context. Simple language is used for the easy understanding of the concepts. Summary points are given at the end of each module under the heading 'points to remember'. Multiple choice questions are also given at the end of the model for self-evaluation. This summary points and terminal questions are given in separate main frames.

After writing the frames, they are edited at three levels: technical accuracy editing, programme technique editing and composition editing. In technical accuracy editing, the programme is thoroughly reviewed with the help of subject experts for the purpose of removing the technical inaccuracies in the subject matter. Programme technique editing is done for removing the deficiencies in the technique of programme

development including designing and sequencing of frames, style of presentation etc. Composition editing is also done with the help of language experts to remove the inaccuracies and weakness from the language and composition point of view such as grammatical mistakes, spelling errors, inappropriateness of the language etc.

**Individual try-out and revision of the frames**

For the purpose of individual try-out, four students of Std. X from one of the Higher Secondary schools were selected . Self- instructional packages on Geography were displayed before them. Instructions to use the modules and response sheets were also given. After careful examination of the answers given by the students and discussion with the students and also with the experts, the language of several frames was made simpler, some frames were modified and some frames were added to provide more examples. Taking another thirty students of Std. X, the prepared modules were again tested. Based on the opinions and results obtained, the modules were once again modified to form the final draft.

**Tools Used in the Study**

The investigator has developed or adopted the following tools to generate the data for the present study.

1. Software evaluation Proforma.
2. Criterion Referenced Test (CRT)

**Method of Experimental Study**

The investigator had employed three study phases which include two test phases for the collection of data and manipulation of experimental variables (i.e., content and method) of the study. The data collection was spread over for a period of fifteen days

10 teaching sessions (40 minutes each) were required for this entire study in each session of the school. Students from Govt. H.S. School, Madurai were involved in the study.

**Phase-1 Identification and Development of self-instructional packages and tools**

In this phase, the investigator has developed the Computer Assisted Modules, Computer Assisted Instructional software, Lesson Plans and Criterion Referenced Tests, Pilot study for the validation of self-instructional packages and for validation of CRT and a Pre-study to establish validity and reliability of the tools were also conducted at this stage.

**Phase-2 Experimental Phase-1**

In the second phase of the study, the investigator conducted the pre-test on the sample selected from grade X. The investigator taught the unit 'Geography ' to all the students by Conventional Method of Teaching. The topic was covered within fifty days by

taking one contact session of 45 minutes per day. One period (teaching session of 45 minutes) each was taken to teach each sub units on Geography .

After completing these units, on the seventh day, a pre-test (Test-2) was administered by using the CRT, to assess the achievement of cognitive skills in 'Geography'.

**Phase – 3 Experimental Phase-2**

Students were divided into two groups by random selection to form the control and experimental groups. The experimental group was called as system approach group. The students of system approach group were given reinforcement through Computer Assisted materials for a period of ten teaching periods. Special care also taken to avoid the was meeting of the students of the experimental and control groups during these intervals. The students of the control group were sent out of the class and were not given any type of reinforcement on the content on Geography.

After giving reinforcement to the experimental groups through system approach, all the students including the control group were called together and a Post - Test was administered on the same day, with the help of the same CRT.

**Variables Controlled during the Experimental Phases**

1. The investigator himself taught the unit in 'Geography' to the whole group of students through Conventional Teaching Method. Thus 'teacher variable' was controlled.
2. The PIM and CAI packages were developed with the help of the same content or lesson plan for teaching 'Geography' by Conventional Teaching Method. The PIM and CAI were employed as a reinforcement strategy to the students in the experimental groups selected for the study. Thus, the treatment variables were controlled.
3. The students participated in the pilot study and pre-study were not involved in the sample selected for the main study.

**Modules - Illustrations**
**Computer Aided Instructions Self learning materials**
**Content Frame with Evaluation Frame**
**X standard Geography**

**Illustration 1** **Unit Monsoon**
**Main frame 1**

`As the sun shines in the Northern Hemisphere during March and September, it is summer in India. In these months, North – West India is very hot. The air gets heated and moves up in attitudes. As a result, a low pressure is formed.

The air mass blow from the high pressure to the low pressure to stabilize the conditions. Therefore, in order to equalize the pressure differences, the air blows from the

high pressure caused by winter conditions in the Southern hemisphere towards the North as the South – West monsoon winds.

The South – West monsoon begins to blow during the beginning of the month of June. Because of the position of the Indian land mass, the air mass divides itself into two branches as the Arabian Sea branch and the Bay of Bengal Branch.

**The Arabian Sea branch:** One of the branches of the South – West monsoon crosses the Arabian Sea and blows towards the West coast of India. Along the coast of South India, the Western ghats run South to North. The Arabian Sea branch of the South – West winds bearing moisture is blocked by the western ghats and climbes up the hills. The rising winds condense and give very heavy rainfall on the windward side of the Western ghats more than 250 cm. The air becomes dry after the deposition of rains. The dry air crosses the Western ghats and climbs down the leeward side of the hills. This air is unable to give rains. This is why the Deccan plateau in the rain shadow region.

**The Bay of Bengal branch:** Another branch of the South – West Monsoon takes a turn towards the Bay of Bengal and enters into the north – eastern India. This branch is blocked by the Himalayas and the moisture laden air climbs upwards. The climbing air cools and condenses to give heavy rainfall, more than 300 cm to a year. This air then turns North – West. As it blows over the Gangetic plains, it gives rains all over the place. But the monsoon winds lose their humidity progressively. Therefore, rainfall also decreases as we go west. When the winds teach the low pressure in North – West India that triggered the monsoon, they become completely dry. As such there is little or no rain and hence the area is a desert.

**Monsoon**

**Illustration/ Sub Frame 1**

**There are three columns stimulus statements are given in column 3.**

**Fill in column 1 with right response for the appropriate statements given in column 3. S1, S2 in column 2 stands for questions against column 3**

| C1 | C2 | C3 |
|---|---|---|
| Response | | Stimulus statements ---------- |
| | S1 | As the sun shines in the Northern Hemisphere during March and September, it is---------- |
| Summer in India | S2 | In these months, North – West India is very hot. The air gets heated and moves up in attitudes. As a result, a ----------. |
| Low pressure is formed | S3 | The air mass blow from the high pressure to ---------- stabilize the conditions. |

| | | |
|---|---|---|
| To the low pressure | S4 | In order to equalize the pressure differences, the air blows from the high pressure caused by winter conditions in the Southern hemisphere towards the ----------. |
| North as the South – West monsoon winds | S5 | The South – West monsoon begins to blow during the beginning of the month of ----------. |
| June | S6 | Because of the position of the Indian land mass, the air mass divides itself into two branches as the Arabian Sea branch and ----------. |
| Bay of Bengal Branch | S7 | One of the branches of the South – West monsoon crosses the Arabian Sea and blows towards the ----------. |
| West coast of India | S8 | The Arabian Sea branch of the South – West winds bearing moisture is blocked by the ---------- and climbes up the hills |
| Western ghats | S9 | Another branch of the South – West Monsoon takes a turn towards the Bay of Bengal and enters into the ----------. |
| North – eastern India | S10 | This branch is blocked by the ---------- and the moisture laden air climbs upwards |
| Himalayas | S11 | The climbing air cools and condenses to give heavy rainfall, more than ---------- cm to a year |
| 300 | S12 | This air then turns North – West. As it blows over the ---------- , it gives rains all over the place |
| Gangetic plains | S13 | But the monsoon winds lose their ---------- progressively. Therefore, rainfall also decreases as we go west |
| Humidity | S14 | When the winds reach the low pressure in ---------- they become completely dry. As such there is little or no rain and hence the area is a desert |
| North – West India | | |

**Illustration 2** **Unit: Soil**

**Main frame 2**

There are different types of soils found in India and they are (i) Sand (ii) Alluvial soil (iii) Black soil and (v) Hill soils.

**(i)** **Sand :** Much sand is found along the littoral zones of India. It is also found in the river beds and the beds of streams. As there are pores between the sand particles, rain water cannot be retained in the sand. Hence, the sand has no

moisture retention capacity. And so the sand is not suitable for the growth of the vegetation.

i) There is little or no decomposed plant materials in the sand. But coconut, casuarinas and cashew are some of the crops which grow well in sandy soils. In the sands of the arid deserts, mineral salts and phosphorous are found and it is possible to cultivate crop if there is water for irrigation.

**(ii)** **Alluvial soil :** They are found deposited in the river beds by the flood waters. The Gangetic plains is an expanse of alluvial soils. The Cauvery that traverses the Peninsular India also generates an alluvial plain in the districts of Thanjavur and Nagai Quaid-e-Milleth.

ii) Alluvial soils are made up of very fine particles. This soil is capable of retaining moisture and hence is very good for the growth of vegetation. Crops such as wheat, paddy, sugarcane and banana grow very well in these soils. The alluvium of the river estuaries and deltas are mixed with the sea water and hence the soil types in those areas in such situations turn themselves into wetlands.

**(iii)** **Red soils :** It is found widely in Peninsular India. There are meta-morphic rocks here and the iron oxide in the metamorphic rocks gives the soil the reddish colour. Red soil is made up of rock particles midway between those of the alluvial soil and sand. It is capable of absorbing water but the capacity to retain moisture is limited. Red soil is moderately fertile. The crops grown in this soil are pulses and oil seeds.

**(iv)** **Black soil :** In the north western part of the Deccan plateau, black soil is found in vast areas. As the cavities between the soil particles are small, it does not quickly absorb rainwater But it is capable of retaining the moisture for a long time. Hence, even if there is low rainfall, it is appropriate for crop cultivation. Cotton, tobacco, chillies and oil seeds and the millets grow well in these soils.

**(v)** **Hill soils :** At the foot hills, where there are dense forests, there is forest soil. This soil has plant nutrients. This soil is found all over India and more specially in the Himalayas, Western ghats, Eastern ghats and the highlands of the Peninsular India. The soil is being eroded by the flowing waters along the hill slopes and at the top of the hills. Hence, the soils of the slopes are not very fertile; particularly, the silica in the rocks are removed. This soil is known locally as ‘Thurukkal’. This type of soil is good for horticultural crops and is also used in the laying of roads.

**Soil**

**Illustration 2 / Sub Frame 1**

**There are three columns stimulus statements are given in column 3.**

**Fill in column 1 with right response for the appropriate statements given in column 3.**

**S1, S2 in column 2 stands for questions against column 3**

| C1 | C2 | C3 |
|---|---|---|
| Response | | Stimulus statements ---------- |
| | S1 | There are different types of soils found in India and they are ---------- |
| (i) Sand (ii) Alluvial soil (iii) Black soil and (v) Hill soils | S2 | Much sand is found along the zones ---------- of India. It is also found in the river beds and the beds of streams |
| littoral | S3 | ---------- between the sand particles, rain water cannot be retained in the sand |
| As there are pores | S4 | Alluvial sand has ---------- capacity. And so the sand is not suitable for the growth of the vegetation |
| No moisture retention | S5 | ---------- are some of the crops which grow well in sandy soils |
| Coconut, casuarinas and cashew | S6 | In the sands of the ---------- are found and it is possible to cultivate crop if there is water for irrigation |
| Arid deserts, mineral salts and phosphorous | S7 | ---------- is found deposited in the river beds by the flood waters |
| Alluvial soil | S8 | ---------- plains is an expanse of alluvial soils |
| The Gangetic | S9 | The Cauvery that traverses the Peninsular India also generates an alluvial plain in the districts of ---------- |
| Thanjavur and Nagai Quaid-e-Milleth | S10 | Red soil is found widely in ----------. There are meta-morphic rocks here and the iron oxide in the metamorphic rocks give the soil the reddish colour |
| Peninsular India | S11 | Red soil is made up of rock particles midway between those of the ----------. It is capable of absorbing water but the capacity to retain moisture is limited |
| Alluvial soil and sand | S12 | The crops grown in this soil are pulses and oil seeds |
| | S13 | In the north western part of the ---------- , black soil is found in vast areas |
| Deccan plateau | S14 | This soil is found all over India and more specially in the ---------- and the highlands of the Peninsular India |
| Himalayas, Western ghats, Eastern ghats | | |

***Analysis and Interpretation***

**Hypothesis 1**

***Null Hypothesis ($H_O$)***

There will be no significant difference between experimental group and control group in the pre-test performance in Achievement in Geography .

**Table 1 Pre-Test Performance Control Group and Experimental Group**

| Group | N | Mean | SD | "t" value | Significance |
|---|---|---|---|---|---|
| Control | 30 | 36.50 | 10.33 | 0.52 | NS |
| Experimental | 30 | 35.17 | 9.83 | | |

df=58 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

There is no significant difference between experimental group and control group in the pre-test performance in Achievement in Geography

**Hypothesis 2**

***Null Hypothesis ($H_O$)***

There will be no significant difference between pre-test and post test performance for control group in Achievement in Geography.

**Table 2 Pre-Test / Post – Test Performance for Control Group**

| Type | N | Mean | SD | "t" value | Significance |
|---|---|---|---|---|---|
| pre | 30 | 36.50 | 10.33 | 0.65 | NS |
| Post | 30 | 37.16 | 10.00 | | |

df= 58 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

There is no significant difference between pre-test and post test performance for control group

**Hypothesis 3**

There will be no significant difference between pre-test and post test performance of experimental group in Achievement in Geography .

**Table 3 Pre-Test / Post – Test Performance for Experimental Group**

| Type | N | Mean | SD | "t" value | Significance |
|---|---|---|---|---|---|
| Pre | 30 | 35.17 | 9.83 | 2.84 | S |
| Post | 30 | 42.16 | 9.31 | | |

df=58 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

There is significant difference between pre-test and post test performance of experimental group.

**Hypothesis 4**

***Null Hypothesis ($H_O$)***

There will be no significant difference between experimental group and control group in the post-test performance in Achievement in Geography

**Table 4 Post-Test Performance Control Group and Experimental Group**

| Group | N | Mean | SD | "t" value | Significance |
|---|---|---|---|---|---|
| Control | 30 | 37.16 | 10.00 | 2.00 | S |
| Experimental | 30 | 42.16 | 9.31 | | |

df=58 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

There is significant difference between experimental group and control group in the post-test performance.

**GAP Closure**

Gap closure is the difference between the mean score obtained by the group and the maximum score, called perfect score. The gap closing score is the percentage up to which the gap to wards perfection gets closed for a group. Percent gap closed is defined by a variable which might be termed percentage of ignorance gap closed and stated as percentage

**Table 5 Gap Closure for Control Group and Experimental Group**

| S.No | Group | Gap Closure |
|---|---|---|
| 1 | Control | 7.06 |
| 2 | Experimental | 28.15 |

The gap closure for experimental group is higher

**Hypothesis 5**

**Research Hypothesis (HR)**

Gap closure in the experimental group will be greater than that of the control group.

**Null Hypothesis (HR)**

There will not be significant difference between experimental and control groups in gap closures (unit wise)

Based on the analysis of the given data null hypothesis is rejected and research hypothesis is accepted.

**Interpretation**

This is an experimental study with pretest post test equivalent group design. Entry behaviour test was conducted to separate control and experimental group to assess the prerequisite knowledge Both the groups are identical and this indicates the nature of identicalness in tune with the pre-test mean scores of both groups. All the pre-test 't'

value for control and experimental reveal no significant difference among control and experimental groups. This establishes their identical nature and no significant achievement in their pre-requisite knowledge.

The means of pre-test scores and post-test scores of control as well as experimental groups differ significantly (0.01 level) with the post test mean being greater than the pretest mean. The implication of that is that the level of acquiring of the basic skills in Geography has increased due to traditional method in control group and System Approach in experimental group.

The post test scores of control and experimental group differ significantly. The means score of experimental group is greater than of control group.

**Findings**

There was no significant difference in the performance of the control group and experiment group in the pre test. This confirms that the control group and experimental group were matched.

There was significant difference in the post test performance of both the control as well as the experimental group. This is due to the effectiveness of the reinforcement by way of conducting the tests and exposure to the students the question pattern and awakening of awareness.

There was significant difference between the performance of the control group and the experimental group in the post test. This is in evidence of the effectiveness of Computer assisted instructions.

The gap closure for the experimental group was greater than that of the control group. This further adduces proof for the effectiveness of programmed teaching and learning.

It could be seen that the System Approach was more effective than the traditional method in teaching of Geography at High School level.

**Conclusion**

It could be observed through experimentation that System Approach was an advantageous point over the traditional method in teaching Geography effectively Computer assisted instruction may be built in appropriate knowledge for the rest of the units. The students of X standard showed, keen interest in learning Geography through system Approach. The teachers evinced there concern in employing system Approach though they felt some difficulties in preparing the module.

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