A COMPARATIVE STUDY OF ACADEMIC ACHIEVEMENT OF SENIOR SECONDARY STUDENTS TAUGHT WITH SIT AND ROT MODE OF EDUSAT INSTRUCTIONS

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ABSTRACT

Keeping in mind the importance of secondary education, Government of India has endeavor to universalization of secondary education (Tilak, 2008). But, it is not feasible to achieve the aims depending upon formal system of school education as it is unable to enroll and entertain 100 percent school age population in formal institutions. The country has to harness the latest technologies to support the process of Secondary education. To meet this challenge and vision, ISRO launched EDUSAT, a satellite exclusively dedicated to education, on September 20, 2004 with the major objectives to provide support to both formal and non-formal education systems in India through low-cost ground system. Edusat system of educational transmission provides two types of services SIT and ROT. The results of this study have concluded that SIT mode of instructions are more effective than ROT mode of edusat instructions as it provide two way interaction facilities. SIT is helpful in improving the academic achievements level of students. It also helpful in improving the efficiency of the teacher and teaching learning process. SIT enable the teachers to reach the students at large and also enable the students as well as the masses to reach the best teachers available in the country.

Keywords : *Academic Achievement, SIT and Rot mode, Edusat*

Education is the significant instrument of empowerment: individual, society and nation. Education is the main instrument for disseminating the accomplishment of human civilization and essential for civic order and good citizenship. Further, maintenance of higher standards, better health and nutrition, increased productivity and sustained economic growth, social and economic inequality and good governance all depends on the widespread education. Therefore, these multiple roles of education make education a key area of public policy in all developing countries. (World Bank 1995)

Education for All (EFA) is a basic human right at the heart of development. It is secondary education that consolidates the gains received from elementary education; secondary education helps in innovating technology and in sustaining growth; it is secondary education that provides skill that could be useful in the labour market; it is secondary education that can keep the people above poverty line without such a danger of falling back into poverty trap – educational poverty or income poverty; and in fact, it is secondary education that can take people to much above poverty line, by increasing the social, occupational and economic levels of the households . While elementary education forms foundation for education, and higher the finishing of the education edifice, it is the secondary education that provides effective links between the two (Tilak, 2007). Further it is also realized that the rapid increase in elementary education leads to increase in demand for secondary education, and hence the need to increase the priority to secondary education. The importance of secondary education and the need to expand it is now being slowly recognized and the government of India has of late initiated some measure toward universalisation of secondary education (Tilak, 2008). But, it is not feasible to achieve the aim depending upon formal system of school education. For this purpose, we need a system which could meet the increasing demand of secondary education because formal system of school education is unable to enroll and entertain 100 percent school age population in formal institutions for developing countries like India.

Educational institutions (Govt. and Private) of the country have continuously endeavored to use the latest technologies to support the process of Secondary education. The access to education among different segments of our population is quite uneven. As there are several challenges for planners and administrators of education. It was the vision of Prof. Satish Dhawan, Former school education. To support his challenge and vision, ISRO launched EDUSAT, a satellite exclusively dedicated to education, on September 20, 2004 with the major objectives to provide support to both formal and non-formal education systems in India through low-cost ground system.

EDUSAT provides an extended 'C' band national beam(1 KU band) to 5 KU band regional beams. The regional beams will facilitate in imparting education in the regional languages. EDUSAT provides communication capacities to meet the requirements of different sectors of education. Be it primary, secondary, tertiary/higher, professional or be it class or distance learning. As per the DECU/ISRO document, EDUSAT strengthens educational efforts, by augmenting curriculum–based teaching, providing effective teacher trainers, community participation, increasing access to education and access to new technologies through an effective ground segment configuration.

ISRO provides 2 types of EDUSAT terminals namely: Satellite Interactive Terminals (SIT) and Receive only Terminals (ROT)

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The State of Punjab has adopted Satellite Interactive Terminal Technology as well as Receive Only Terminals mode of imparting educational instruction. The EDUSAT Project was conceived by the Govt. of Punjab in the year 2005. A tripartite Memo of Understanding was executed with Indian Space Research Organization (ISRO) and Ministry of Human Resource and Development (MHRD) to lend support to the Govt. of Punjab for implementation of the EDUSAT Programme. A sum of Rs. 12 Crores was provided by the Govt. of Punjab for establishment of EDUSAT network in the State of Punjab in the year 2005-06. In the 1st Phase, one studio was created in the premises of Punjab School Education Board and State Hub was established therein. Simultaneously, 300 Satellite Interactive Terminals (SITs) were provided in the education institutions of different department considering the fact that EDUSAT is a 'boon' for educational fraternity which provides an opportunity to make teaching- learning process more interesting and intelligible through live interaction.

Bhakara Narayana (2005). Conducted a survey on "EDUSAT" in Higher Technical Education" and highlighted, that there has been a significant rise in enrolment in higher education which were about two million in 1980 raised to more than 7.73 million students during(1999-2000) in India. But the higher education has its own peculiarities and trends. The intake of engineering students across the country has been increased sharply from 3,59,574 (with Ph.D.) requiring an additional 33,574 professors and assistant professors. Thus in our education system there is serious crunch both in terms of infrastructure and human resources. Therefore, with the use of satellite communication (Edusat) and high quality content most problem faced by technical higher education in India could be mitigated. Kaur, Damanpreet (2010) conducted a study on 'A comparative study of academic achievement of senior secondary students taught with and without EDUSAT mode of instructions'. The investigator found that EDUSAT mode of instructions is an effective way of teaching. It increases the efficiency of teachers and improve the academic achievements of level the students. The teachers' involvement during the broadcast as facilitator and conduct of pre and post broadcast activity is noteworthy. The study also reveals that Satellite Interactive Terminals(SIT) technique of EDUSAT programme which provides interactive mode facility to students to raise their queries and receiving clarification form the experts has special impact on achievement level of the students.

Objectives of the Study:

To find academic achievement scores of senior secondary school student in the subject of Economics and English.

To find whether there exist significant difference between the academic achievement of students taught with SIT and ROT mode of Edusat Instructions.

To find whether there exist significant difference between the academic achievement of the students of Economics taught with SIT and ROT mode of Edusat instructions.

To find whether there exist significant difference between the academic achievement of the students of English taught with SIT and ROT mode of Edusat instructions.

Method

Sample:

The sample of the study consists of total (N)=64 students of 4 Edusat Schools. In which 32 students were from 2 schools under SIT mode of Edusat instructions and 32 students are from 2 schools under ROT mode of Edusat instructions.

Measures:

The researcher had used a self prepared objective type test as tool to measure the academic achievement of the students in the subject of Economics. The tool consists of 25 items on the topic "Concepts of Aggregate Demand (AD) and Aggregate Supply (AS)" already taught in EDUSAT lectures.

Procedure:

For the conduct of this study experimental method of research was adopted. The sample was divided in experimental and controlled group and achievement test was conducted on both the group for the collection and analysis of the data. The scores of the test were statistically operated to calculate mean median and mode . 't' ratios were also calculated.

Results and Discussions:

Table 1: Showing Total Mean scores of Academic Achievement of Senior Secondary Students in Economics and English taught with SIT and with ROT.

Group	N	Mean	Median	Mode	Std. Deviation	SEM	T-Value
SIT	32	43.87	44	46	7.77	1.73	4.731*
ROT	32	25.68	24	26	6.41		

* significant at 0.05 and 0.01 levels.

Table 1 shows that the t-ratio was 4.731 which is significant at 0.01 levels of confidence. This reveals that there exist a significant difference between the Total academic achievement score of the students in Economics and English taught with SIT and ROT mode of edusat instructions. Hence, hypothesis 1, "There does not exist significant difference between Total academic achievement of senior secondary students of Economics and English taught with SIT and ROT mode of edusat instructions" is rejected. Further, the mean, median and mode scores of the students taught with SIT are respectively 18.19, 20, 20 higher than ROT group.

It is evident from table no.1 standard deviation of both groups are 7.77 and 6.41 respectively. The standard error of Mean is 1.73. It may be concluded that Total academic achievement level of the senior secondary students of taught with SIT is significantly higher over their counterparts group(ROT group).

Table 2: Showing Mean scores of Academic Achievement of Senior Secondary Students in Economics taught with SIT and with ROT.

Group	N	Mean	Med.	Mode	S.D.	SE_M	T-Value
SIT	32	23.75	24	26	7.3	1.31	6.393 *
ROT	32	12.75	12	8	5.39		

**significant at 0.01 levels.

Table 2 shows that the t-ratio was 6.393 which is significant at 0.01 levels of confidence. This reveals that there exist a significant difference between the academic achievement score of the students in Economics taught with SIT and ROT mode of edusat instructions. Hence, hypothesis 2, "There does not exist significant difference between academic achievement of senior secondary students of English taught with SIT and ROT mode of edusat instructions" is rejected. Further, the mean, median and mode scores of the students taught Economics with SIT are respectively 11, 12, 18 higher than ROT group. Standard deviation of both groups are 7.3 and 5.39 respectively. The standard error of Mean is 1.31. It may be concluded that achievement level of the senior secondary students of Economics taught with SIT is significantly higher over their counterparts group(ROT group).

Table 1.3: Showing Mean scores of Academic Achievement of Senior Secondary Students in English taught with SIT and with ROT.

Group	N	Mean	Median	Mode	SD	SE_M	T-Value
SIT	32	22.75	22	24	7.31	1.36	2.89*
ROT	32	11.82	11	8	6.34		

* significant at 0.05 and 0.01 levels.

Table 1.3 shows that the t-ratio was calculated as 2.89 which is significant at 0.01 levels of confidence. This reveals that there exist a significant difference between the academic achievement score of the students in English taught with SIT and with ROT mode of edusat instructions. Hence, hypothesis 3, "There does not exist significant difference between academic achievement of senior secondary students of English taught with SIT and with ROT mode of edusat instructions" is rejected. Further, the mean, median and mode scores of the students in English taught with SIT are respectively 10.93, 11, 16 higher than ROT group. Standard deviation of both groups are 7.31 and 6 .34 respectively. The standard error of Mean is 1.36. It may be concluded that achievement level of the senior secondary students of English taught with SIT is significantly higher over their group counterparts (ROT group).

Conclusions

Form analysis of the data and investigation of results investigator reached on some conclusion, which are as follow:

It has been concluded that SIT mode of instructions are more effective than ROT mode of edusat instructions as it provide two way interaction facilities. SIT is helpful in improving the academic achievements level of students. It also helpful to improve the efficiency of the teachers and teaching learning process. The finding of the study has also commensurate with the results of the study of Chandra, Bhala and Bhandigadi (2006) i.e. the launch of EDUSAT has helped in providing quality instructions through video programmes to students studying in the interior villages. The benefit gained in terms of gain in knowledge and understanding of the content, improvement in attendance and holding attention and interest are overwhelming. The teacher involvement

during the broadcast as facilitator and conduct of pre and post broadcast activity is noteworthy. The study also reveals that Satellite Interactive Terminals(SIT) technique of EDUSAT programme which provides interactive mode facility to students to raise their queries and receiving clarification form the experts has special impact on achievement level of the students. This result also supported by the study of Kaur, Damanpreet(2010)i.e. two way interactive teaching has been appreciated and gained the acceptance of the students. Therefore, SIT enable the teachers to reach the students at large and also enable the students as well as the masses to reach the best teachers available in the country. The proper implementation of the SIT- lessons will definitely make teaching learning process more joyful, attractive and effective.

Educational Implications :

The result of the study reveal that academic achievement scores of the students taught with SIT and with ROT mode of EDUSAT instructions has significant difference, which establish the fact that SIT as a Mean of teaching is much better than the ROT mode of edusat teaching. So, maximum senior secondary school in Punjab should be covered under SIT programs.

All school subjects should be given equal importance and for every subject there should be minimum three periods in a week. Time-table should be so framed that the topic to be taught through EDUSAT should have been covered by the class teacher before hand, so that students do not face much difficulty in understanding it and proper revisions could be made through EDUSAT lecture.

Classroom teachers should help the students in formulating questions, seeking clarifications from expert teachers.

The study suggests that SIT mode of edusat should be incorporated in education policy of senior secondary classes and teacher training programs in near future.

This study suggests that a selection committee should be framed to select expert and competent teachers from senior secondary schools to deliver the lessons.

The investigators suggests that the principal's should have financial support and authority to solve the technical problems at their own at school level so that the lesson could be delivered uninterruptedly and smoothly.

The technical experts should be appointed in every school who can sort out the technical problems at school level.

· All ROT school should be upgraded to SIT mode of edusat Programme.

SIT Programme should have possibility to upgrade as Smart Classroom schools.

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